

# **APPENDIX B2**

## **PRODUCT SPECIATION INFORMATION**



**Idaho Asphalt Supply, Inc.**  
**Blackfoot, Idaho Facility**

## Product Chemical Speciation

|   | Hexane                           | Benzene  | Toluene  | Ethylbenzene | Xylene   | 1,2,4-Trimethyl benzene | Isopropyl benzene | Cyclohexane | Total    |
|---|----------------------------------|----------|----------|--------------|----------|-------------------------|-------------------|-------------|----------|
| <b>Raw Products</b>                           |                                  |          |          |              |          |                         |                   |             |          |
| Distillate Fuel Oil #2 (a)                    | 0.00010%                         | 0.00080% | 0.03200% | 0.13000%     | 0.29000% | 1.00000%                | 0.00000%          | 0.00000%    | 1.45290% |
| Kerosene (a)                                  | 0.00500%                         | 0.00400% | 0.13300% | 0.12700%     | 0.31000% | 0.00000%                | 0.00000%          | 0.00000%    | 0.57900% |
| Naphtha (a)                                   | 1.50000%                         | 0.10000% | 2.00000% | 0.50000%     | 2.50000% | 0.00000%                | 0.20000%          | 1.20000%    | 8.00000% |
| <b>Mixed Products</b>                         |                                  |          |          |              |          |                         |                   |             |          |
| <b>Fuel Oil #1 (b)</b>                        |                                  |          |          |              |          |                         |                   |             |          |
| - Kerosene: 80%                               | 0.00400%                         | 0.00320% | 0.10640% | 0.10160%     | 0.24800% | 0.00000%                | 0.00000%          | 0.00000%    | 0.46320% |
| - Distillate Fuel Oil #2 20%                  | 0.00002%                         | 0.00016% | 0.00640% | 0.02600%     | 0.05800% | 0.20000%                | 0.00000%          | 0.00000%    | 0.29058% |
| - Total: 100%                                 | 0.00402%                         | 0.00336% | 0.11280% | 0.12760%     | 0.30600% | 0.20000%                | 0.00000%          | 0.00000%    | 0.75378% |
| <b>Cracked Heavy Oil Amines (b)</b>           |                                  |          |          |              |          |                         |                   |             |          |
| - Distillate Fuel Oil #2 85%                  | 0.00009%                         | 0.00068% | 0.02720% | 0.11050%     | 0.24650% | 0.85000%                | 0.00000%          | 0.00000%    | 1.23497% |
| - DETA 15%                                    | 0.00000%                         | 0.00000% | 0.00000% | 0.00000%     | 0.00000% | 0.00000%                | 0.00000%          | 0.00000%    | 0.00000% |
| - Total: 100%                                 | 0.00009%                         | 0.00068% | 0.02720% | 0.11050%     | 0.24650% | 0.85000%                | 0.00000%          | 0.00000%    | 1.23497% |
| <b>Asphalt Emulsion (w/ fuel content) (b)</b> |                                  |          |          |              |          |                         |                   |             |          |
| - Asphalt Cement 90%                          | SPECIATE FROM AP-42 CHAPTER 11.1 |          |          |              |          |                         |                   |             |          |
| - Naphtha: 10.0%                              | 0.15000%                         | 0.01000% | 0.20000% | 0.05000%     | 0.25000% | 0.00000%                | 0.02000%          | 0.12000%    | 0.80000% |
| - Total: 100%                                 | 0.15000%                         | 0.01000% | 0.20000% | 0.05000%     | 0.25000% | 0.00000%                | 0.02000%          | 0.12000%    | 0.80000% |
| <b>Asphalt Cutback (b)</b>                    |                                  |          |          |              |          |                         |                   |             |          |
| - Asphalt Cement 76%                          | SPECIATE FROM AP-42 CHAPTER 11.1 |          |          |              |          |                         |                   |             |          |
| - Additives 24.0%                             | 0.00170%                         | 0.00370% | 0.03270% | 0.00990%     | 0.10000% | 0.14880%                | 0.00000%          | 0.00000%    | 0.29680% |
| - Total: 100%                                 | 0.00170%                         | 0.00370% | 0.03270% | 0.00990%     | 0.10000% | 0.14880%                | 0.00000%          | 0.00000%    | 0.29680% |

Notes: (a) Speciation profiles from TANKS 4.0 database. Exception is benzene content in jet naphtha, substituted value listed in MSDS  
(b) Speciation profiles determined from worst-case facility product recipes and available information for raw products.

# MATERIAL SAFETY DATA SHEET

Idaho Asphalt Supply, Inc.

MSDS #: 100

DATE REVISED: 03/28/02

SUPERSEDES ANY PREVIOUS

## Section 1 Product Identification/Contact Information

### Product Identity:

**Generic Category:** Asphalt Cements  
**Product Name(s):** 120-150, 200-300, AC-5, AC-10, AC-20, AC-40, PBA-2, PBA-5, PG 58-22, PG 58-28, PG 64-22, AR-4000W  
**Formula:** Trade Secret

**Company Address:** Idaho Asphalt Supply, Inc.  
P.O. Box 50538 Idaho Falls, ID 83405

**PHONE:** (208)-524-5871 **TRANSPORTATION EMERGENCY PHONE:** 1-800-524-1679

**Product Use:** Road Paving and Resurfacing

## Section 2 Composition

| <u>Ingredients</u> | <u>CAS #</u> | <u>Concentration</u> |
|--------------------|--------------|----------------------|
| Asphalt Cement     | 8052-42-4    | 100%                 |

## Section 3 Physical & Chemical Properties

|  |  |
|--|--|
| <b>Boiling Point:</b> 900°F  | <b>Specific Gravity @ 60°F:</b> 1.0 to 1.1 |
| <b>Vapor Pressure:</b> <1  | <b>Melting Point:</b> 131° F               |
| <b>Vapor Density:</b> >1   | <b>Evaporation Rate:</b> <1                |
| <b>Solubility in Water:</b> Insoluble                                    |  |
| <b>Appearance and Odor:</b> Black liquid or solid; odor of hydrocarbons. |  |

## Section 4 Fire Fighting Measures

**Flash Point:** 450 °F

**Autolgnition Temperature NFPA:** 905 °F

**Extinguishing Media:** CO<sub>2</sub>, Class "B" extinguisher, foam and water fog

**Special Fire Fighting Procedures:** Avoid breathing vapors, wear self contained breathing apparatus. **DO NOT APPLY WATER**

**Unusual Fire Explosion Hazards:** Water in contact with hot asphalt may result in a violent reaction causing an increase in tank pressure and substantial foaming of the product.

**Fire & Explosion Hazards:** LEL and UEL not listed by NFPA. Flammable at temperatures above 500 °F. Flammability may depend on H<sub>2</sub>S and residual solvent concentrations.

### Hazard Rating (NFPA)

Health : 1  
Fire: 1  
Reactivity: 0  
Special: 0

### Hazard Rating Scale

|              |            |
|--------------|------------|
| 0 - Minimal  | 3- Serious |
| 1 - Slight   | 4 - Severe |
| 2 - Moderate |            |

**Section 5****Reactivity**

**Stable:** YES

**Conditions to Avoid:** DO NOT APPLY WATER, Ignition source.

**Incompatible Materials:** Avoid strong oxidizing agents.

**Hazardous Decomposition Products:** Combustion may form CO<sub>2</sub>, CO and sulfur dioxide.

**Hazardous Polymerization:** Will not occur.

**Section 6****Health Hazard Data**

**Hazards:** May cause irritation and burns to skin and eyes when brought in contact.

**Inhalation:** This product is not likely to present an inhalation hazard during normal use. At elevated temperatures and in confined spaces, vapors may cause irritation of the respiratory tract.

**Skin Absorption:** No significant symptoms indicative of skin absorption expected.

**Skin Irritation:** Will cause burns when product is hot. May cause dermatitis and acne like lesion with prolonged exposure.

**Ingestion:** Ingestion of this material can cause severe irritation or burns of the mouth, throat, esophagus, and stomach. May cause nausea and vomiting.

**Eye Contact:** Will burn and irritate.

**Primary Route of Exposure:** Skin and eye contact are the primary routes of exposure to this product.

**Carcinogen:** Not listed by NTP, IARC, or OSHA

**Section 7****Emergency First Aid Measures**

**Inhalation:** Remove to fresh air. Give oxygen or artificial respiration as needed. Obtain medical attention promptly.

**Eye Contact:** Flush eyes with low pressure water for at least 15 minutes and obtain medical attention immediately.

**Skin Contact:** If hot product should contact skin, thermal burns will result. Immediately cool the affected area with cold water. It is not advisable to immediately remove product. Natural separation will occur in 48 - 78 hours. Removal should be attempted only under the direction of a physician.

**Ingestion:** If ingested, do not induce vomiting, call a physician immediately.

**Section 8****Exposure Limits/Exposure Controls**

| Chemical Name        | PEL (OSHA) | REL (NIOSH) | STEL (15min)        | IDLH(NIOSH) |
|----------------------|------------|-------------|---------------------|-------------|
| Asphalt Cement Fumes |            |             | 5 mg/m <sup>3</sup> |             |

**Respiratory Protection:** Avoid breathing vapors in confined spaces. NOISH approved respirators may be required if TLV's are exceeded.

**Eye Protection:** Use safety glasses, goggles or face shields.

**Skin Protection:** Use rubber gloves or leather gloves, coveralls, and impervious footwear.

**Engineering Controls:** Local exhaust ventilation may be required to meet exposure standards in confined areas.

**Handling Precautions:** Storage tanks and trucks must be emptied, cooled, ventilated, and tested for absence of vapors before allowing personnel entry.

**Section 9****Accidental Release Measures**

**Land Spill** - Stop release by making earthen dike, prevent flow from entering sewers and water ways. Allow to cool. Remove large spill. Soak up product with sand.

**Waste Disposal** - Handle in accordance with federal, state and local regulations.

**Section 10****Transportation Information**

**Shipping Information:** Hot Liquid, UN 3257

**Placard:** UN 3257

**Labels:** "HOT"

**Empty:** Residue, UN 3257 Placard, markings remain the same

Insure that transport or storage container is free of water and moisture before loading.

**Section 11****Special Precautions**

- Insure that transport or storage container is free of water and moisture before loading.
- During storage or transport of hot product, hydrogen sulfide (H<sub>2</sub>S) may accumulate in the head space of storage or transportation vessels. Open hatches with caution. Avoid breathing vapors. Vapors may be flammable and may cause nausea and dizziness when inhaled.

**Section 12****Miscellaneous**

Some of the information presented and conclusions drawn herein are from sources other than direct test data on the product itself. The information in this MSDS was obtained from sources which we believe reliable. However, the information is provided without any warranty, expressed or implied, regarding its correctness.

The conditions or methods of handling, storage, use and disposal of the products are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.

This MSDS was prepared and is to be used only for these products. If the product is used as a component in another product, this MSDS information may not be applicable.

This MSDS has been prepared in accordance with the requirements of the OSHA Hazardous Communication Standard (29 CFR 1200)

# MATERIAL SAFETY DATA SHEET

Idaho Asphalt Supply, Inc.

MSDS #: 150

DATE REVISED: 04/29/02

SUPERSEDES DATE: 01/31/97

## Section 1 Product Identification/Contact Information

### Product Identity:

**Generic Category:** Polymer Modified Asphalts  
**Product Name:** AC-20P, AC-20R, PBA-3, PG 58-34, PG 64-28, PG 64-34, PG 70-28, PG 76-28, PG 64-28ER, PG 64-28NV, PG 58-40  
**Formula:** Trade Secret

**Company Address:** Idaho Asphalt Supply, Inc.  
P.O. Box 50538 Idaho Falls, ID 83405

**PHONE:** (208)-524-5871 **TRANSPORTATION EMERGENCY PHONE:** 1-800-524-1679

**Product Use:** Road Paving and Resurfacing

## Section 2 Composition

| <u>Ingredients</u> | <u>CAS #</u> | <u>Concentration</u> |
|--------------------|--------------|----------------------|
| Asphalt Cement     | 8052-42-4    | 95-100%              |
| Polymer            | trade secret | 0-5%                 |
| Emulsifier         | trade secret | 0-2%                 |

## Section 3 Physical & Chemical Properties

|  |  |
|--|--|
| <b>Boiling Point:</b> 900 °F   | <b>Specific Gravity @ 60°F:</b> 1.0 -1.1 |
| <b>pH:</b> essentially neutral   | <b>Melting Point:</b> 131 ° F            |
| <b>Vapor Pressure:</b> <1  | <b>Evaporation Rate:</b> <1              |
| <b>Vapor Density:</b> >1   |  |
| <b>Solubility in Water:</b> Insoluble                                    |  |
| <b>Appearance and Odor:</b> Black liquid or solid; odor of hydrocarbons. |  |

## Section 4 Fire Fighting Measures

**Flash Point:** 450 ° F

**Autoignition Temperature NFPA:** 905 ° F

**Extinguishing Media:** CO<sub>2</sub>, Class "B" extinguisher, foam

**Special Fire Fighting Procedures:** Avoid breathing vapors, wear self-contained breathing apparatus. **DO NOT APPLY WATER**

**Unusual Fire Explosion Hazards:** Water in contact with hot asphalt may result in a violent reaction causing an increase in tank pressure and substantial foaming of the product.

**Fire & Explosion Hazards:** This product is not defined as flammable or combustible.

### Hazard Rating (NFPA)

Health : 1  
Fire: 1  
Reactivity: 0  
Special: 0

### Hazard Rating Scale

0 - Minimal  
1 - Slight  
2 - Moderate  
3- Serious  
4 - Severe

**Section 5****Reactivity**

**Stable:** YES

**Conditions to Avoid:** Ignition source.

**Incompatible Materials:** Avoid strong oxidizing agents. Hot product in contact with water can cause foaming or sudden evolution of steam which could cause pressure build up and possible rupture of a tank or vessel.

**Hazardous Decomposition Products:** Combustion may form CO<sub>2</sub>, CO and sulfur dioxide.

**Hazardous Polymerization:** Will not occur.

**Section 6****Health Hazard Data**

**Hazards:** May cause irritation and burns to skin and eyes when brought in contact.

**Inhalation:** This product is not likely to present an inhalation hazard during normal use. At elevated temperatures and in confined spaces, vapors may cause irritation of the respiratory tract.

**Skin Absorption:** No significant symptoms indicative of skin absorption expected.

**Skin Irritation:** Will cause burns when product is hot. May cause dermatitis and acne like lesion with prolonged exposure.

**Ingestion:** Ingestion of this material can cause severe irritation or burns of the mouth, throat, esophagus, and stomach.

**Eye Contact:** Will burn and irritate.

**Primary Route of Exposure:** Skin and eye contact are the primary routes of exposure to this product.

**Carcinogen:** Not listed by NTP, IARC, or OSHA

**Section 7****Emergency First Aid Measures**

**Inhalation:** Remove to fresh air. Give oxygen or artificial respiration as needed. Obtain medical attention promptly.

**Eye Contact:** Flush eyes with low pressure water for at least 15 minutes and obtain medical attention immediately.

**Skin Contact:** If hot product should contact skin, thermal burns will result. Immediately cool the affected area with cold water. It is not advisable to immediately remove product. Natural separation will occur in 48 - 78 hours. Removal should be attempted only under the direction of a physician.

**Ingestion:** If ingested, do not induce vomiting, call a physician immediately.

**Section 8****Exposure Limits/Exposure Controls**

| Chemical Name        | PEL (OSHA) | REL (NIOSH) | STEL                | IDLH(NIOSH) |
|----------------------|------------|-------------|---------------------|-------------|
| Asphalt Cement Fumes |            |             | 5 mg/m <sup>3</sup> |             |
| Polymer              |            |             |                     |             |
| Emulsifier           |            |             |                     |             |

**Respiratory Protection:** Avoid breathing vapors in confined spaces. NOISH approved respirators may be required if exposure limits are exceeded.

**Eye Protection:** Use safety glasses, goggles or face shields.

**Skin Protection:** Use rubber gloves or leather gloves, coveralls, and impervious footwear.

**Engineering Controls:** Local exhaust ventilation may be required to meet exposure standards in confined areas.

**Handling Precautions:** Storage tanks and trucks must be emptied, cooled, ventilated, and tested for absence of vapors before allowing personnel entry.

## Section 9 Accidental Release Measures

**Land Spill** - Stop release by making earthen dike, prevent flow from entering sewers and water ways. Allow to cool. Remove large spill. Soak up product with sand.

**Waste Disposal** - Handle in accordance with federal, state and local regulations.

## Section 10 Transportation Information

**Shipping Information:** Hot Liquid, UN 3257

**Placard:** UN 3257

**Labels:** "HOT"

**Empty:** Residue, UN 3257 Placard, markings remain the same

Insure that transport or storage container is free of water and moisture before loading.

## Section 11 Special Precautions

- Insure that transport or storage container is free of water and moisture before loading.
- During storage or transport of hot product, hydrogen sulfide ( $H_2S$ ) may accumulate in the head space of storage or transportation vessels. Open hatches with caution. Avoid breathing vapors. Vapors may be flammable and may cause nausea and dizziness when inhaled.

## Section 12 Miscellaneous

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# MATERIAL SAFETY DATA SHEET

Idaho Asphalt Supply, Inc.

MSDS #: 200

DATE REVISED: 03/28/02

SUPERSEDES DATE: 01/31/97

## Section 1 Product Identification/Contact Information

### Product Identity:

**Generic Category:** Medium Cure Cutback Asphalt  
**Product Name:** MC-70, MC-250, MC-500, MC-800, MC-3000  
**Formula:** Trade Secret

**Company Address:** Idaho Asphalt Supply, Inc.  
P.O. Box 50538 Idaho Falls, ID 83405

**PHONE:** (208)-524-5871 **TRANSPORTATION EMERGENCY PHONE:** 1-800-524-1679

**Product Use:** Road Paving and Resurfacing

## Section 2 Composition

| <u>Ingredients</u> | <u>CAS #</u> | <u>Concentration</u> |
|--------------------|--------------|----------------------|
| Asphalt Cement     | 8052-42-4    | 60-90%               |
| No. 1 Fuel         | 8008-20-6    | 10-40%               |

## Section 3 Physical & Chemical Properties

|  |  |
|--|--|
| <b>Boiling Point:</b> 313°F  | <b>Specific Gravity @ 60°F:</b> 0.90 to 1.10 |
| <b>Vapor Pressure:</b> <1  | <b>Melting Point:</b> N/A                    |
| <b>Vapor Density:</b> >1   | <b>Evaporation Rate:</b> <1                  |
| <b>Solubility in Water:</b> No   |  |
| <b>Appearance and Odor:</b> Black liquid or solid. Odor of hydrocarbons. |  |

## Section 4 Fire Fighting Measures

**Flash Point:** 212°F

**Autoignition Temperature NFPA:** N/A

**Extinguishing Media:** CO<sub>2</sub>, Class "B" extinguisher.

**Special Fire Fighting Procedures:** Avoid breathing vapors, wear self contained breathing apparatus. **DO NOT APPLY WATER**

**Unusual Fire Explosion Hazards:** Flammable at temperatures below 100°F. **DO NOT MIX WITH WATER** **Caution: Static electricity may be source of ignition.**

**Fire & Explosion Hazards:** This product is not defined as flammable or combustible.

### Hazard Rating (NFPA)

Health : 2  
Fire: 2  
Reactivity: 0  
Special: 0

### Hazard Rating Scale

0 - Minimal 3- Serious  
1 - Slight 4 - Severe  
2 - Moderate

**Section 5****Reactivity**

**Stable:** YES

**Conditions to Avoid:** Ignition source.

**Incompatible Materials:** Avoid strong oxidizing agents.

**Hazardous Decomposition Products:** Combustion may form CO<sub>2</sub>, CO and sulfur dioxide.

**Hazardous Polymerization:** Will not occur.

**Section 6****Health Hazard Data**

**Hazards:** May cause irritation and burns to skin and eyes when brought in contact.

**Inhalation:** Use with good ventilation. May cause respiratory tract irritation.

**Skin Absorption:** No significant symptoms indicative of skin absorption expected.

**Skin Irritation:** Will cause burns when product is hot. May cause dermatitis and acne like lesion with prolonged exposure.

**Ingestion:** Ingestion of this material can cause severe irritation or burns of the mouth, throat, esophagus, and stomach.

**Eye Contact:** Will burn and irritate.

**Primary Route of Exposure:** Skin and eye contact are the primary routes of exposure to this product.

**Carcinogen:** Not listed by NTP, IARC, or OSHA

**Section 7****Emergency First Aid Measures**

**Inhalation:** Remove to fresh air. Give oxygen or artificial respiration as needed. Obtain medical attention promptly.

**Eye Contact:** Flush eyes with low pressure water for at least 15 minutes and obtain medical attention immediately.

**Skin Contact:** If hot product should contact skin, thermal burns will result. Immediately cool the affected area with cold water. It is not advisable to immediately remove product. Natural separation will occur in 48 - 78 hours. Removal should be attempted only under the direction of a physician.

**Ingestion:** If ingested, do not induce vomiting, call a physician immediately.

**Section 8****Exposure Limits/Exposure Controls**

| Chemical Name        | PEL (OSHA) | REL (NIOSH)           | STEL                | IDLH(NIOSH) |
|----------------------|------------|-----------------------|---------------------|-------------|
| Asphalt Cement Fumes | None       |                       | 5 mg/m <sup>3</sup> |             |
| No. 1 Fuel           |            | 100 mg/m <sup>3</sup> |                     |             |

**Respiratory Protection:** Avoid breathing vapors in confined spaces. NOISH approved respirators may be required if TLV's are exceeded.

**Eye Protection:** Use safety glasses, goggles or face shields.

**Skin Protection:** Use rubber gloves or leather gloves, coveralls, and impervious footwear.

**Engineering Controls:** Local exhaust ventilation may be required to meet exposure standards in confined areas.

**Handling Precautions:** Storage tanks and trucks must be emptied, cooled, ventilated, and tested for absence of vapors before allowing personnel entry.

**Section 9****Accidental Release Measures**

**Land Spill** - Stop release by making earthen dike, prevent flow from entering sewers and water ways. Allow to cool. Remove large spill. Soak up product with sand.

**Waste Disposal** - Handle in accordance with federal, state and local regulations.

**Section 10****Transportation Information**

**Shipping Information:** Hot Tars, 3, NA 1999, III

**Placard:** Flammable Liquid, NA 1999, III

**Labels:** "HOT"

**Empty:** Residue - Flammable, 1999 Placard, markings remain the same

Insure that transport or storage container is free of water and moisture before loading.

**Section 11****Special Precautions**

- Insure that transport or storage container is free of water and moisture before loading.
- During storage or transport of hot product, hydrogen sulfide ( $H_2S$ ) may accumulate in the head space of storage or transportation vessels. Open hatches with caution. Avoid breathing vapors. Vapors may be flammable and may cause nausea and dizziness when inhaled.

**Section 12****Miscellaneous**

Some of the information presented and conclusions drawn herein are from sources other than direct test data on the product itself. The information in this MSDS was obtained from sources which we believe reliable. However, the information is provided without any warranty, expressed or implied, regarding its correctness.

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# MATERIAL SAFETY DATA SHEET

Idaho Asphalt Supply, Inc.

MSDS #: 300

DATE REVISED: 03/28/02  
SUPERSEDES DATE: 01/31/97

## Section 1 Product Identification/Contact Information

### Product Identity:

Generic Category: Slow Cure Cutback Asphalts  
Product Name: SC-250, SC-800  
Formula: Trade Secret

Company Address: Idaho Asphalt Supply, Inc.  
P.O. Box 50538 Idaho Falls, ID 83405

PHONE: (208)-524-5871 TRANSPORTATION EMERGENCY PHONE: 1-800-524-1679

Product Use: Road Paving and Resurfacing

## Section 2 Composition

| Ingredients                           | CAS #      | Concentration |
|---------------------------------------|------------|---------------|
| Asphalt Cement                        | 8052-42-4  | 60-80%        |
| No. 2 Diesel Fuel                     | N/A        | 0-30%         |
| Catalytic Cracked Light Cycle Oil     | 64741-59-9 | 0-10%         |
| Fluid Catalytic Cracked Clarified Oil | 64741-62-4 | 0-10%         |

## Section 3 Physical & Chemical Properties

Boiling Point: 313 °F  
Vapor Pressure: <1  
Vapor Density: >1  
Solubility in Water: Insoluble  
Appearance and Odor: Viscous brown to black liquid; odor of amines and hydrocarbons.

Specific Gravity @ 60°F: 1.025-1.06  
Melting Point: Unknown  
Evaporation Rate: <1

## Section 4 Fire Fighting Measures

Flash Point: Unknown  
Autoignition Temperature NFPA: Unknown  
Extinguishing Media: CO<sub>2</sub>, Class "B" extinguisher.  
Special Fire Fighting Procedures: Avoid breathing vapors, wear self contained breathing apparatus. **DO NOT APPLY WATER**  
Unusual Fire Explosion Hazards: Do Not heat material above 212 °F to avoid generating excessive steam pressure.  
Fire & Explosion Hazards: This product is not defined as flammable or combustible.

### Hazard Rating (NFPA)

Health: 2  
Fire: 2  
Reactivity: 0  
Special: 0

### Hazard Rating Scale

0 - Minimal  
1 - Slight  
2 - Moderate  
3 - Serious  
4 - Severe

**Section 5****Reactivity**

**Stable:** YES

**Conditions to Avoid:** Ignition source.

**Incompatible Materials:** Avoid strong oxidizing agents

**Hazardous Decomposition Products:** Combustion may form CO<sub>2</sub>, CO and sulfur dioxide.

**Hazardous Polymerization:** Will not occur.

**Section 6****Health Hazard Data**

**Hazards:** May cause irritation and burns to skin and eyes when brought in contact.

**Inhalation:** This product is not likely to present an inhalation hazard during normal use. At elevated temperatures and in confined spaces, vapors may cause irritation of the respiratory tract.

**Skin Absorption:** No significant symptoms indicative of skin absorption expected.

**Skin Irritation:** Will cause burns when product is hot. May cause dermatitis and acne like lesion with prolonged exposure.

**Ingestion:** Ingestion of this material can cause severe irritation or burns of the mouth, throat, esophagus, and stomach.

**Eye Contact:** Will burn and irritate.

**Primary Route of Exposure:** Skin and eye contact are the primary routes of exposure to this product.

**Carcinogen:** Not listed by NTP, IARC, or OSHA

**Section 7****Emergency First Aid Measures**

**Inhalation:** Remove to fresh air. Give oxygen or artificial respiration as needed. Obtain medical attention promptly.

**Eye Contact:** Flush eyes with low pressure water for at least 15 minutes and obtain medical attention immediately.

**Skin Contact:** If hot product should contact skin, thermal burns will result. Immediately cool the affected area with cold water. It is not advisable to immediately remove product. Natural separation will occur in 48 - 78 hours. Removal should be attempted only under the direction of a physician.

**Ingestion:** If ingested, do not induce vomiting, call a physician immediately.

**Section 8****Exposure Limits/Exposure Controls**

| Chemical Name                         | PEL (OSHA) | REL (NIOSH) | STEL                           | IDLH(NIOSH) |
|---------------------------------------|------------|-------------|--------------------------------|-------------|
| Asphalt Cement                        |            |             | 5 mg/m <sup>3</sup>            |             |
| No. 2 Diesel Fuel                     |            |             |                                |             |
| Catalytic Cracked Light Cycle Oil     |            |             | 5 mg/m <sup>3</sup> (oil mist) |             |
| Fluid Catalytic Cracked Clarified Oil |            |             | 5 mg/m <sup>3</sup> (oil mist) |             |

**Respiratory Protection:** Avoid breathing vapors in confined spaces. NOISH approved respirators may be required if exposure limits are exceeded.

**Eye Protection:** Use safety glasses, goggles or face shields.

**Skin Protection:** Use rubber gloves or leather gloves, coveralls, and impervious footwear.

**Engineering Controls:** Local exhaust ventilation may be required to meet exposure standards in confined areas.

**Handling Precautions:** Storage tanks and trucks must be emptied, cooled, ventilated, and tested for absence of vapors before allowing personnel entry.

## Section 9 Accidental Release Measures

**Land Spill** - Stop release by making earthen dike, prevent flow from entering sewers and water ways. Allow to cool. Remove large spill. Soak up product with sand.

**Waste Disposal** - Handle in accordance with federal, state and local regulations.

## Section 10 Transportation Information

**Shipping Information:** Hot Tars, 3, NA 1999, III

**Placard:** Flammable Liquid, NA 1999, III

**Labels:** "HOT"

**Empty:** Residue - Flammable, 1999 Placard, markings remain the same

Insure that transport or storage container is free of water and moisture before loading.

## Section 11 Special Precautions

- Insure that transport or storage container is free of water and moisture before loading.
- During storage or transport of hot product, hydrogen sulfide ( $H_2S$ ) may accumulate in the head space of storage or transportation vessels. Open hatches with caution. Avoid breathing vapors. Vapors may be flammable and may cause nausea and dizziness when inhaled.

## Section 12 Miscellaneous

Some of the information presented and conclusions drawn herein are from sources other than direct test data on the product itself. The information in this MSDS was obtained from sources which we believe reliable. However, the information is provided without any warranty, expressed or implied, regarding its correctness. The conditions or methods of handling, storage, use and disposal of the products are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.

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# MATERIAL SAFETY DATA SHEET

Idaho Asphalt Supply, Inc.

MSDS #: 400

DATE REVISED: 03/28/02  
SUPERSEDES ANY PREVIOUS

## Section 1 Product Identification/Contact Information

### Product Identity:

**Generic Category:** Cationic Emulsion Asphalts  
**Product Name:** CSS-1DIL, CSS-1H DIL, CRS-1H DIL, CHR-3H, CRS-1, CRS-2, CRS-2A, CRS-2F, CRS-2H, CRS-2NV, CSS-1, CSS-1H, STE-1  
**Formula:** Trade Secret

**Company Address:** Idaho Asphalt Supply, Inc.  
P.O. Box 50538 Idaho Falls, ID 83405

**PHONE:** (208)-524-5871 **TRANSPORTATION EMERGENCY PHONE:** 1-800-524-1679

**Product Use:** Road Paving and Resurfacing

## Section 2 Composition

| <u>Ingredients</u>                    | <u>CAS #</u> | <u>Concentration</u> |
|---------------------------------------|--------------|----------------------|
| Asphalt Cement                        | 8052-42-4    | 60-99%               |
| Emulsifier                            | TSCA         | 0-5%                 |
| Hydrochloric Acid (Hydrogen Chloride) | 7647-01-0    | 0-1%                 |

## Section 3 Physical & Chemical Properties

**Boiling Point:** 212 °F  
**Vapor Pressure:** <1  
**Vapor Density:** >1  
**Solubility in Water:** Up to 100%  
**Appearance and Odor:** Viscous brown to black liquid; odor of amines and hydrocarbons.

**Specific Gravity @ 60°F:** 1.025-1.06  
**Melting Point:** Unknown  
**Evaporation Rate:** <1  
**pH:** 1-4

## Section 4 Fire Fighting Measures

**Flash Point:** Unknown  
**Autoignition Temperature NFPA:** Unknown  
**Extinguishing Media:** CO<sub>2</sub>, Class "B" extinguisher.  
**Special Fire Fighting Procedures:** Avoid breathing vapors, wear self contained breathing apparatus. **DO NOT APPLY WATER**  
**Unusual Fire Explosion Hazards:** Do Not heat material above 212 °F to avoid generating excessive steam pressure.  
**Fire & Explosion Hazards:** This product is not defined as flammable or combustible.

### Hazard Rating (NFPA)

Health : 1  
Fire: 0  
Reactivity: 0  
Special: 0

### Hazard Rating Scale

0 - Minimal  
1 - Slight  
2 - Moderate  
3- Serious  
4 - Severe

**Section 5****Reactivity**

**Stable:** YES

**Conditions to Avoid:** DO NOT HEAT ABOVE 212 °F.

**Incompatible Materials:** Avoid strong oxidizing agents

**Hazardous Decomposition Products:** Combustion may form CO<sub>2</sub>, CO and sulfur dioxide.

**Hazardous Polymerization:** Will not occur.

**Section 6****Health Hazard Data**

**Hazards:** May cause irritation and burns to skin and eyes when brought in contact.

**Inhalation:** This product is not likely to present an inhalation hazard during normal use. At elevated temperatures and in confined spaces, vapors may cause irritation of the respiratory tract.

**Skin Absorption:** No significant symptoms indicative of skin absorption expected.

**Skin Irritation:** Will cause minor burns when product is hot. May cause dermatitis and acne like lesion with prolonged exposure.

**Ingestion:** Ingestion of this material can cause severe irritation or burns of the mouth, throat, esophagus, and stomach.

**Eye Contact:** Will burn and irritate.

**Primary Route of Exposure:** Skin and eye contact are the primary routes of exposure to this product.

**Carcinogen:** Not listed by NTP, IARC, or OSHA

**Section 7****Emergency First Aid Measures**

**Inhalation:** Remove to fresh air. Give oxygen or artificial respiration as needed. Obtain medical attention promptly.

**Eye Contact:** Flush eyes with low pressure water for at least 15 minutes and obtain medical attention immediately.

**Skin Contact:** If hot product should contact skin, thermal burns will result. Immediately cool the affected area with cold water. It is not advisable to immediately remove product.

**Ingestion:** If ingested, do not induce vomiting, call a physician immediately.

**Section 8****Exposure Limits/Exposure Controls**

| Chemical Name                         | PEL (OSHA) | REL (NIOSH)           | STEL                | IDLH(NIOSH) |
|---------------------------------------|------------|-----------------------|---------------------|-------------|
| Asphalt Cement Fumes                  |            |                       | 5 mg/m <sup>3</sup> |             |
| Hydrochloric Acid (Hydrogen Chloride) |            | 100 mg/m <sup>3</sup> | 5 ppm               | 50 ppm      |
| Emulsifier                            |            |                       |                     |             |

**Respiratory Protection:** Avoid breathing vapors in confined spaces. NOISH approved respirators may be required if exposure limits are exceeded.

**Eye Protection:** Use safety glasses, goggles or face shields.

**Skin Protection:** Use rubber gloves or leather gloves, coveralls, and impervious footwear.

**Engineering Controls:** Local exhaust ventilation may be required to meet exposure standards in confined areas.

**Handling Precautions:** Storage tanks and trucks must be emptied, cooled, ventilated, and tested for absence of vapors before allowing personnel entry.

**Section 9****Accidental Release Measures**

**Land Spill** - Stop release by making earthen dike, prevent flow from entering sewers and water ways. Allow to cool. Remove large spill. Soak up product with sand.

**Waste Disposal** - Handle in accordance with federal, state and local regulations.

**Section 10****Transportation Information**

**Shipping Information:** Not regulated

**Placard:** None

**Labels:** None

**Empty:** None

**Section 11****Special Precautions**

- Insure that transport or storage container is free of water and moisture before loading.
- During storage or transport of hot product, hydrogen sulfide (H<sub>2</sub>S) may accumulate in the head space of storage or transportation vessels. Open hatches with caution. Avoid breathing vapors. Vapors may be flammable and may cause nausea and dizziness when inhaled.

**Section 12****Miscellaneous**

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# MATERIAL SAFETY DATA SHEET

Idaho Asphalt Supply, Inc.

MSDS #: 425

DATE REVISED: 03/28/02

SUPERSEDES DATE: 01/31/97

## Section 1 Product Identification/Contact Information

### Product Identity:

**Generic Category:** Cationic Emulsion Cutbacks & Polymer Modified Cutbacks  
**Product Name:** CPC-1, CMS-2, CMS-2S, DP-1, CME, CME-250, CMS-2P, CRS-2D  
**Formula:** Trade Secret

**Company Address:** Idaho Asphalt Supply, Inc.  
P.O. Box 50538 Idaho Falls, ID 83405

**PHONE:** (208)-524-5871 **TRANSPORTATION EMERGENCY PHONE:** 1-800-524-1679

**Product Use:** Road Paving and Resurfacing

## Section 2 Composition

| <u>Ingredients</u>                    | <u>CAS #</u> | <u>Concentration</u> |
|---------------------------------------|--------------|----------------------|
| Asphalt Cement                        | 8052-42-4    | 60-98%               |
| Naptha                                | 8030-30-6    | 0-10%                |
| No. 1 Fuel (Kerosene)                 | 8008-20-6    | 0-3%                 |
| Emulsifier                            | TSCA         | 0.15-3%              |
| Hydrochloric Acid (Hydrogen Chloride) | 7647-01-0    | 0-1%                 |
| Polymer                               | trade secret | 0-5%                 |

## Section 3 Physical & Chemical Properties

**Boiling Point:** 212 °F  
**Vapor Pressure:** <1  
**Vapor Density:** >1  
**Solubility in Water:** Up to 100%  
**Appearance and Odor:** Viscous brown to black liquid; odor of amines and hydrocarbons.

**Specific Gravity @ 60°F:** 1.0-1.2  
**Melting Point:** Unknown  
**Evaporation Rate:** <1

## Section 4 Fire Fighting Measures

**Flash Point:** Unknown  
**Autolgnition Temperature NFPA:** Unknown  
**Extinguishing Media:** CO<sub>2</sub>, Class "B" extinguisher.  
**Special Fire Fighting Procedures:** Avoid breathing vapors, wear self contained breathing apparatus. **DO NOT APPLY WATER**  
**Unusual Fire Explosion Hazards:** **Do Not** heat material above 212 °F to avoid generating excessive steam pressure.  
**Fire & Explosion Hazards:** This product is not defined as flammable or combustible.

### Hazard Rating (NFPA)

Health : 1  
Fire: 0  
Reactivity: 0  
Special: 0

### Hazard Rating Scale

0 - Minimal  
1 - Slight  
2 - Moderate  
3 - Serious  
4 - Severe

**Section 5****Reactivity**

**Stable:** YES

**Conditions to Avoid:** DO NOT HEAT ABOVE 212 °F, Ignition source.

**Incompatible Materials:** Avoid strong oxidizing agents

**Hazardous Decomposition Products:** Combustion may form CO<sub>2</sub>, CO and sulfur dioxide.

**Hazardous Polymerization:** Will not occur.

**Section 6****Health Hazard Data**

**Hazards:** May cause irritation and burns to skin and eyes when brought in contact.

**Inhalation:** This product is not likely to present an inhalation hazard during normal use. At elevated temperatures and in confined spaces, vapors may cause irritation of the respiratory tract.

**Skin Absorption:** No significant symptoms indicative of skin absorption expected.

**Skin Irritation:** Will cause burns when product is hot. May cause dermatitis with prolonged exposure.

**Ingestion:** Ingestion of this material can cause severe irritation or burns of the mouth, throat, esophagus, and stomach.

**Eye Contact:** Will burn and irritate.

**Primary Route of Exposure:** Skin and eye contact are the primary routes of exposure to this product.

**Carcinogen:** Not listed by NTP, IARC, or OSHA

**Section 7****Emergency First Aid Measures**

**Inhalation:** Remove to fresh air. Give oxygen or artificial respiration as needed. Obtain medical attention promptly.

**Eye Contact:** Flush eyes with low pressure water for at least 15 minutes and obtain medical attention immediately.

**Skin Contact:** If hot product should contact skin, thermal burns will result. Immediately cool the affected area with cold water. It is not advisable to immediately remove product. Natural separation will occur in 48 - 78 hours. Removal should be attempted only under the direction of a physician.

**Ingestion:** If ingested, do not induce vomiting, call a physician immediately.

**Section 8****Exposure Limits/Exposure Controls**

| Chemical Name                         | PEL (OSHA) | REL (NIOSH)           | STEL                | IDLH(NIOSH)        |
|---------------------------------------|------------|-----------------------|---------------------|--------------------|
| Asphalt Cement Fumes                  |            |                       | 5 mg/m <sup>3</sup> |                    |
| Hydrochloric Acid (Hydrogen Chloride) |            | 100 mg/m <sup>3</sup> | 5 ppm               | 50 ppm             |
| Naptha                                | 100 ppm    | 100 ppm               |                     | 1000 ppm (10% LEL) |
| No. 1 Fuel (Kerosene)                 |            | 100 mg/m <sup>3</sup> |                     |                    |
| Emulsifier                            |            |                       |                     |                    |
| Polymer                               |            |                       |                     |                    |

**Respiratory Protection:** Avoid breathing vapors in confined spaces. NOISH approved respirators may be required if exposure limits are exceeded.

**Eye Protection:** Use safety glasses, goggles or face shields.

**Skin Protection:** Use rubber gloves or leather gloves, coveralls, and impervious footwear.

**Engineering Controls:** Local exhaust ventilation may be required to meet exposure standards in confined areas.

**Handling Precautions:** Storage tanks and trucks must be emptied, cooled, ventilated, and tested for absence of vapors before allowing personnel entry.

## Section 9 Accidental Release Measures

**Land Spill** - Stop release by making earthen dike, prevent flow from entering sewers and water ways. Allow to cool. Remove large spill. Soak up product with sand.

**Waste Disposal** - Handle in accordance with federal, state and local regulations.

## Section 10 Transportation Information

**Shipping Information:** Not Regulated

**Placard:** None

**Labels:** None

**Empty:** Not Regulated

## Section 11 Special Precautions

- Insure that transport or storage container is free of water and moisture before loading.
- During storage or transport of hot product, hydrogen sulfide ( $H_2S$ ) may accumulate in the head space of storage or transportation vessels. Open hatches with caution. Avoid breathing vapors. Vapors may be flammable and may cause nausea and dizziness when inhaled.

## Section 12 Miscellaneous

Some of the information presented and conclusions drawn herein are from sources other than direct test data on the product itself. The information in this MSDS was obtained from sources which we believe reliable. However, the information is provided without any warranty, expressed or implied, regarding its correctness.

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# MATERIAL SAFETY DATA SHEET

## Idaho Asphalt Supply, Inc.

MSDS #: 450

DATE REVISED: 03/28/02  
SUPERSEDES DATE: 01/31/97

### Section 1 Product Identification/Contact Information

**Product Identity:**

**Generic Category:** Polymer Modified Emulsions  
**Product Name:** CHR-3P, CRS-1P, CRS-1HP, CRS-1 DIL, CRS-1HP DIL, CRS-2P, CRS-2R, LMCRS-2, LMCRS-2A, LMCRS-2H, LMCRS-2NV  
**Formula:** Trade Secret

**Company Address:** Idaho Asphalt Supply, Inc.  
P.O. Box 50538 Idaho Falls, ID 83405

**PHONE:** (208)-524-5871 **TRANSPORTATION EMERGENCY PHONE:** 1-800-524-1679

**Product Use:** Road Paving and Resurfacing

### Section 2 Composition

| <u>Ingredients</u>                    | <u>CAS #</u> | <u>Concentration</u> |
|---------------------------------------|--------------|----------------------|
| Asphalt Cement                        | 8052-42-4    | 60-90%               |
| Polymer                               | trade secret | 0-8%                 |
| Emulsifier                            | trade secret | 0-5%                 |
| Hydrochloric Acid (Hydrogen Chloride) | 7647-01-0    | 0-1%                 |

### Section 3 Physical & Chemical Properties

**Boiling Point:** 212 °F  
**pH:** essentially neutral  
**Vapor Pressure:** <1  
**Vapor Density:** >1  
**Solubility in Water:** Insoluble  
**Appearance and Odor:** Black liquid or solid; odor of amines and hydrocarbons.

**Specific Gravity @ 60°F:** 1.0 -1.1  
**Melting Point:** 131 ° F  
**Evaporation Rate:** <1

### Section 4 Fire Fighting Measures

**Flash Point:** N/A  
**Autolgnition Temperature NFPA:** N/A  
**Extinguishing Media:** CO<sub>2</sub> , Class "B" extinguisher, foam  
**Special Fire Fighting Procedures:** Avoid breathing vapors, wear self contained breathing apparatus. **DO NOT APPLY WATER**  
**Unusual Fire Explosion Hazards:** N/A

**Fire & Explosion Hazards:** This product is not defined as flammable or combustible.

| <b>Hazard Rating (NFPA)</b> | <b>Hazard Rating Scale</b> |
|-----------------------------|----------------------------|
| Health: 1                   | 0 - Minimal 3- Serious     |
| Fire: 1                     | 1 - Slight 4 - Severe      |
| Reactivity: 0               | 2 - Moderate               |
| Special: 0                  |                            |

**Section 5****Reactivity**

**Stable:** YES

**Conditions to Avoid:** DO NOT HEAT ABOVE 212 °F, Ignition source.

**Incompatible Materials:** Avoid strong oxidizing agents.

**Hazardous Decomposition Products:** Combustion may form CO<sub>2</sub>, CO and sulfur dioxide.

**Hazardous Polymerization:** Will not occur.

**Section 6****Health Hazard Data**

**Hazards:** May cause irritation and burns to skin and eyes when brought in contact.

**Inhalation:** This product is not likely to present an inhalation hazard during normal use. At elevated temperatures and in confined spaces, vapors may cause irritation of the respiratory tract.

**Skin Absorption:** No significant symptoms indicative of skin absorption expected.

**Skin Irritation:** Will cause burns when product is hot. May cause dermatitis and acne like lesion with prolonged exposure.

**Ingestion:** Ingestion of this material can cause severe irritation or burns of the mouth, throat, esophagus, and stomach.

**Eye Contact:** Will burn and irritate.

**Primary Route of Exposure:** Skin and eye contact are the primary routes of exposure to this product.

**Carcinogen:** Not listed by NTP, IARC, or OSHA

**Section 7****Emergency First Aid Measures**

**Inhalation:** Remove to fresh air. Give oxygen or artificial respiration as needed. Obtain medical attention promptly.

**Eye Contact:** Flush eyes with low pressure water for at least 15 minutes and obtain medical attention immediately.

**Skin Contact:** If hot product should contact skin, thermal burns will result. Immediately cool the affected area with cold water. It is not advisable to immediately remove product. Natural separation will occur in 48 - 78 hours. Removal should be attempted only under the direction of a physician.

**Ingestion:** If ingested, do not induce vomiting, call a physician immediately.

**Section 8****Exposure Limits/Exposure Controls**

| Chemical Name        | PEL (OSHA) | REL (NIOSH) | STEL                | IDLH(NIOSH) |
|----------------------|------------|-------------|---------------------|-------------|
| Asphalt Cement Fumes |            |             | 5 mg/m <sup>3</sup> |             |
| Polymer              |            |             |                     |             |
| Emulsifier           |            |             |                     |             |

**Respiratory Protection:** Avoid breathing vapors in confined spaces. NOISH approved respirators may be required if exposure limits are exceeded.

**Eye Protection:** Use safety glasses, goggles or face shields.

**Skin Protection:** Use rubber gloves or leather gloves, coveralls, and impervious footwear.

**Engineering Controls:** Local exhaust ventilation may be required to meet exposure standards in confined areas.

**Handling Precautions:** Storage tanks and trucks must be emptied, cooled, ventilated, and tested for absence of vapors before allowing personnel entry.

**Section 9****Accidental Release Measures**

**Land Spill** - Stop release by making earthen dike, prevent flow from entering sewers and water ways. Allow to cool. Remove large spill. Soak up product with sand.

**Waste Disposal** - Handle in accordance with federal, state and local regulations.

**Section 10****Transportation Information**

**Shipping Information:** Not Regulated

**Placard:** None

**Labels:** None

**Empty:** Not Regulated

**Section 11****Special Precautions**

- During storage or transport of hot product, hydrogen sulfide ( $H_2S$ ) may accumulate in the head space of storage or transportation vessels. Open hatches with caution. Avoid breathing vapors. Vapors may be flammable and may cause nausea and dizziness when inhaled.

**Section 12****Miscellaneous**

Some of the information presented and conclusions drawn herein are from sources other than direct test data on the product itself. The information in this MSDS was obtained from sources which we believe reliable. However, the information is provided without any warranty, expressed or implied, regarding its correctness.

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NOV 25 2002 4:46PM  
NOV 1 0 2002 1:41PM

WRIGHT OIL & TIRE CO

NO: 9395 P: 2/30

**ExxonMobil**

# MATERIAL SAFETY DATA BULLETIN

PAGE 1 OF 12

## #1LS DIESEL POWER + W/DYE

### 1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: #1LS DIESEL POWER + W/DYE

SUPPLIER: EXXONMOBIL CORPORATION

3225 GALLOWAY RD.

FAIRFAX, VA 22037

24 - Hour Health and Safety Emergency (call collect): 800-737-4611

24 - Hour Transportation Emergency:

CHEMTREC: 800-434-9300 202-483-7616

LUBES AND FUELS: 800-834-3296

Product and Technical Information:

Lubricants and Specialties: 800-662-4525 800-441-9966

Fuels Products: 800-947-9147

MSDS Fax on Demand: 613-228-1467

MSDS Internet Website: <http://emmsds.ihesolutions.com/>

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL NAMES AND SYNONYMS: HYDROCARBONS AND ADDITIVES

GLOBALLY REPORTABLE MSDS INGREDIENTS:

| Substance Name           | Approx. Wt% |
|--------------------------|-------------|
| -----                    | -----       |
| DIESEL FUEL (58334-30-5) | 100         |

NOTE: Composition may contain up to 0.5% performance additive.

See Section 8 for exposure limits (if applicable).

Date Printed 11/8/02

FROM: IDAHO ASPHALT SUPPLY

FAX NO.: 2087851818

Nov. 26 2002 08:48AM P2

**ExxonMobil**

# MATERIAL SAFETY DATA BULLETIN

20SEP2001

#115 DIESEL FUEL + W/DIE

PAGE 2 OF 12

## 3. HAZARDS IDENTIFICATION

This product is considered hazardous according to regulatory guidelines (See Section 15).

**EMERGENCY OVERVIEW:** Clear (May Be Dyed) Liquid. Material is combustible. Liquid can release vapors that readily form flammable mixtures at or above the flash point. Product can accumulate a static charge which may cause a fire or explosion. DDT REG No. : 128

**POTENTIAL HEALTH EFFECTS:** Respiratory irritation, headache, dizziness, nausea, loss of consciousness, and in cases of extreme exposure, possibly death. Diesel exhaust may cause lung cancer. Prolonged, repeated skin contact may result in skin irritation or more serious skin disorders. Low viscosity material-if swallowed may enter the lungs and cause lung damage. Note: This product contains polycyclic aromatic hydrocarbons, some of which have been reported to cause skin cancer in test animals and in humans under conditions of poor personal hygiene and prolonged repeated contact.

For further health effects/toxicological data, see Section 11.

## 4. FIRST AID MEASURES

**EYE CONTACT:** Flush thoroughly with water. If irritation occurs, call a physician.

**SKIN CONTACT:** Remove contaminated clothing. Dry wipe exposed skin and cleanse yourself with waterless hand cleaner and follow by washing thoroughly with soap and water. For those providing assistance, avoid further contact to yourself or others. Wear impervious gloves. Launder contaminated clothing separately before reuse. Discard contaminated articles that cannot be laundered. (See Section 16 - Injection Injury)

**INHALATION:** Remove from further exposure. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with mechanical device or use mouth-to-mouth resuscitation.

**INGESTION:** Seek immediate medical attention. Do not induce vomiting.

**NOTE TO PHYSICIANS:** Material if aspirated into the lungs may cause chemical pneumonitis. PRE-EXISTING MEDICAL CONDITIONS WHICH MAY BE AGGRAVATED BY EXPOSURE: Hydrocarbon Solvents/Petroleum Hydrocarbons- Skin contact may aggravate an existing dermatitis.

**ExxonMobil**

# MATERIAL SAFETY DATA BULLETIN

28SEP2001

#115 EXXONEL POWER + W/DTE

PAGE 3 OF 12

## 5. FIRE-FIGHTING MEASURES

**EXTINGUISHING MEDIA:** Carbon dioxide, foam, dry chemical and water fog.

**SPECIAL FIRE FIGHTING PROCEDURES:** Water may be ineffective, but water should be used to keep fire-exposed containers cool. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply.

**SPECIAL PROTECTIVE EQUIPMENT:** For fires in enclosed areas, fire fighters must use self-contained breathing apparatus.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** Material is combustible. Liquid can release vapors that readily form flammable mixtures at or above the flash point. Product can accumulate a static charge which may cause a fire or explosion.

**COMBUSTION PRODUCTS:** Fumes, smoke, carbon monoxide, sulfur oxides, aldehydes and other decomposition products, in the case of incomplete combustion.

Flash Point (F): > 55 (131) (ASTM D-93).

Flammable Limits (approx. % vol. in air) - LEL: 0.6%, UEL: 7.0%

NFPA HAZARD ID: Health: 1, Flammability: 2, Reactivity: 0

## 6. ACCIDENTAL RELEASE MEASURES

**NOTIFICATION PROCEDURES:** Report spills/releases as required to appropriate authorities. U.S. Coast Guard and EPA regulations require immediate reporting of spills/releases that could reach any waterway including intermittent dry creeks. Report spill/release to Coast Guard National Response Center toll free number (800) 424-8802. In case of accident or road spill notify CHEMTREC (800) 424-9300.

**PROCEDURES IF MATERIAL IS RELEASED OR SPILLED:**

**LAND SPILL:** Eliminate sources of ignition. Shut off source taking normal safety precautions. Take measures to minimize the effects on ground water. Recover by pumping using explosion-proof equipment or contain spilled liquid with sand or other suitable absorbent and remove mechanically into containers. If necessary, dispose of adsorbed residues as directed in Section 13.

**WATER SPILL:** Eliminate sources of ignition and warn other ships in the vicinity to stay clear. Notify port and other relevant authorities. Confine with booms if skimming equipment is available to recover the spill. Otherwise disperse in unconfined waters, if permitted by local authorities and environmental agencies. If permitted by regulatory authorities the use of suitable dispersants should be considered where recommended in local oil spill procedures.

**ENVIRONMENTAL PRECAUTIONS:** Prevent material from entering sewers, water sources or low lying areas; advise the relevant authorities if it has, or if it contaminates soil/vegetation.

**PERSONAL PRECAUTIONS:** See Section 8

**ExxonMobil**

# MATERIAL SAFETY DATA BULLETIN

22HNF2001

SILK DIESEL POWER + W/DYE

PAGE 4 OF 12

## 7. HANDLING AND STORAGE

**HANDLING:** Keep product away from high energy ignition sources, heat, sparks, pilot lights, static electricity, and open flame. Harmful in contact with or if absorbed through the skin. Avoid inhalation of vapors or mists. Use in well ventilated area away from all ignition sources. See Section 8 for additional personal protection advice when handling this product. **PORTABLE CONTAINERS** approved for storing fuel must be placed on the ground and the nozzle must stay in contact with the container when filling to prevent build up and discharge of static electricity.

**STORAGE:** Store in a cool area. Avoid sparking conditions. Ground and bond all transfer equipment.

**SPECIAL PRECAUTIONS:** To prevent and minimize fire or explosion risk from static accumulation and discharge, effectively bond and/or ground product transfer system. Do not use electronic devices (including but not limited to cellular phones, computers, calculators, pagers, etc.) in or around any fueling operation or storage area unless the devices are certified intrinsically safe by an approved national testing agency and to the safety standards required by national and/or local laws and regulations. Electrical equipment and fittings must comply with local fire prevention regulations for this class of product. Use the correct grounding procedures. Refer to national or local regulations covering safety at petroleum handling and storage areas for this product.

**EMPTY CONTAINER WARNING:** Empty containers retain residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Do not attempt to refill or clean container since residue is difficult to remove. Empty drums should be completely drained, properly bunged and promptly returned to a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### OCCUPATIONAL EXPOSURE LIMITS:

ExxonMobil recommends an 8-hour time-weighted average (TWA) exposure of 500 mg/m<sup>3</sup> total vapor (approx. 100 ppm) or 5 mg/m<sup>3</sup> stable aerosols.

**VENTILATION:** Use in well ventilated area with local exhaust ventilation. Ventilation equipment must be explosion proof. Use away from all ignition sources.

**RESPIRATORY PROTECTION:** Approved respiratory equipment must be used when airborne concentrations are unknown or exceed the recommended exposure limit. Self-contained breathing apparatus may be required for use in confined or enclosed spaces.

**EYE PROTECTION:** If splash with liquid is possible, chemical type goggles should be worn.

(Section continued next page)

**ExxonMobil****MATERIAL SAFETY DATA BULLETIN**

888881001

#115 DIESEL POWER + W/DYE

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**SKIN PROTECTION:** Impervious gloves must be worn. If contact is likely oil impervious clothing must be worn. Good personal hygiene practices should always be followed.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

Typical physical properties are given below. Consult Product Data Sheet for specific details.

**APPEARANCE:** Liquid  
**COLOR:** Clear (May Be Dyed)  
**ODOR:** Hydrocarbon  
**ODOR THRESHOLD-ppm:** NE  
**pH:** NA  
**BOILING POINT C(F):** > 149(300)  
**MELTING POINT C(F):** NA  
**FLASH POINT C(F):** > 55(131) (ASTM D-93)  
**FLAMMABILITY (solids):** NE  
**AUTO FLAMMABILITY C(F):** NE  
**EXPLOSIVE PROPERTIES:** NA  
**OXIDIZING PROPERTIES:** NA  
**VAPOR PRESSURE-mmHg 20 C:** 0.5  
**VAPOR DENSITY:** > 2.0  
**EVAPORATION RATE:** NE  
**RELATIVE DENSITY, 15/4 C:** 0.82-0.87  
**SOLUBILITY IN WATER:** Negligible  
**PARTITION COEFFICIENT:** > 3.5  
**VISCOSITY AT 40 C, cSt:** > 1.0  
**VISCOSITY AT 100 C, cSt:** NE  
**POUR POINT C(F):** < -7(20)  
**FREEZING POINT C(F):** NE  
**VOLATILE ORGANIC COMPOUND:** NE  
**DMO EXTRACT, IP-146 (WT.%):** NA  
NA=NOT APPLICABLE NE=NOT ESTABLISHED D=DECOMPOSES

FOR FURTHER TECHNICAL INFORMATION, CONTACT YOUR MARKETING REPRESENTATIVE

**10. STABILITY AND REACTIVITY**

**STABILITY (THERMAL, LIGHT, ETC.):** Stable.  
**CONDITIONS TO AVOID:** Extreme heat and high energy sources of ignition.  
**INCOMPATIBILITY (MATERIALS TO AVOID):** Halogens, strong acids, alkalies, and oxidizers.  
**HAZARDOUS DECOMPOSITION PRODUCTS:** Product does not decompose at ambient temperatures.  
**HAZARDOUS POLYMERIZATION:** Will not occur.

**ExxonMobil****MATERIAL SAFETY DATA BULLETIN**

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G115 DIESEL POWER + W/TYE

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**11. TOXICOLOGICAL DATA****---ACUTE TOXICOLOGY---**

**ORAL TOXICITY (RATS):** Practically non-toxic (LD50: greater than 2000 mg/kg). ---Based on testing of similar products and/or the components.

**DERMAL TOXICITY (RABBITS):** Practically non-toxic (LD50: greater than 2000 mg/kg). ---Based on testing of similar products and/or the components.

**INHALATION TOXICITY (RATS):** Practically non-toxic (LC50: greater than 5 mg/l). ---Based on testing of similar products and/or the components.

**EYE IRRITATION (RABBITS):** Practically non-irritating. (Draize score: greater than 8 but 19 or less). ---Based on testing of similar products and/or the components.

**SKIN IRRITATION (RABBITS):** Practically non-irritating. (Primary Irritation Index: greater than 0.5 but less than 3). ---Based on testing of similar products and/or the components.

**---SUBCHRONIC TOXICOLOGY (SUMMARY)---**

Repeated dermal application of middle distillates, heating oils and diesel oils to rabbits for 2-4 weeks at up to 1 gm/kg resulted in strong to severe skin irritation with some weight loss at the higher dose. Toxic effects ranging from weight loss to mortality was observed in rabbits treated repeatedly with very high doses (6 gm/kg) of these oils. Repeated inhalation exposure of middle distillate and diesel vapor and aerosol to rats for 2-4 weeks at up to 6 mg/l resulted in respiratory tract irritation, lung changes/infiltration/accumulation, and some reduction in lung function.

**---REPRODUCTIVE TOXICOLOGY (SUMMARY)---**

Diesel fuel vapors were tested in an inhalation teratology (developmental toxicity) study in rats and when only minimal maternal toxicity was observed, no fetotoxic or developmental effects were observed. A developmental toxicity study of dermally applied middle distillates did indicate fetotoxicity (reduced litter size, litter weight, increased resorptions) at doses that also caused significant maternal toxicity.

**---CHRONIC TOXICOLOGY (SUMMARY)---**

Diesel fuel, heating oil and middle distillates have been shown to be carcinogenic in lifetime mouse skin painting bioassays. While in some cases, the tumor incidence is low in the test populations and possibly associated with skin irritation, concurrent evidence from short-term predicative tests (Modified Ames) does indicate some level of mutagenic activity associated with levels of polycyclic aromatic compounds in certain test samples.

**---SENSITIZATION (SUMMARY)---**

Middle distillate oils were not skin sensitizers when tested in a Modified Guinier Guinea Pig Sensitization Assay.

**---OTHER TOXICOLOGY DATA---**

(Section continued next page)

**ExxonMobil****MATERIAL SAFETY DATA BULLETIN**

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515L DIESEL POWER + W/DYE

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Overexposure to diesel exhaust fumes may result in eye irritation, headaches, nausea, and respiratory irritation. Animal studies involving lifetime exposure to high levels of diesel exhaust have produced variable results, with some studies indicating a potential for lung cancer. Limited evidence from epidemiological studies suggest an association between long-term occupational exposure to diesel engine emissions and lung cancer. Diesel engine exhaust typically consists of gases and particulates, including carbon dioxide, carbon monoxide, nitrogen compounds, oxides of sulfur, and hydrocarbons. Diesel exhaust composition will vary with fuel, engine type, load cycle, engine maintenance, tuning and exhaust gas treatment. Use of adequate ventilation and/or respiratory protection in the presence of diesel exhaust is recommended to minimize exposures. This product contains ethylbenzene. The International Agency for Research on Cancer (IARC) has evaluated ethylbenzene and classified it as possibly carcinogenic to humans (Group 2B) based on sufficient evidence for carcinogenicity in experimental animals, but inadequate evidence for cancer in exposed humans.

**12. ECOLOGICAL INFORMATION****ENVIRONMENTAL FATE AND EFFECTS:**

In the absence of specific environmental data for this product, this assessment is based on information for representative substances.

**ECOTOXICITY:** Based on test results for similar products, this substance may be toxic to aquatic organisms such as algae and daphnia (EL50/IRL50 = 1-10 mg/L). This substance has also been shown to be toxic to specific fish species (EL50 = 1-10 mg/L for rainbow trout, Atlantic silverside).

**MOBILITY:** Dissolution of the higher molecular weight hydrocarbon components in water will be limited, but losses through sediment adsorption may be significant.

**PERSISTENCE AND DEGRADABILITY:** The majority of the components in this product would be expected to be inherently biodegradable. The constituents of diesel fuels/heating oil which are volatilized will photodegrade in the atmosphere. The less volatile, more water-soluble components which are aromatic hydrocarbons will also undergo aqueous photodegradation.

**BIOACCUMULATIVE POTENTIAL:** Not established.

**ExxonMobil****MATERIAL SAFETY DATA BULLETIN**

N0002001

#115 DIESEL POWER + W/DIE

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**13. DISPOSAL CONSIDERATIONS**

**WASTE DISPOSAL:** Product is suitable for burning for fuel value in compliance with applicable laws and regulations.

**RCRA INFORMATION:** Disposal of unused product may be subject to RCRA regulations (40 CFR 261). Disposal of the used product may also be regulated due to ignitability, corrosivity, reactivity, or toxicity as determined by the Toxicity Characteristic Leaching Procedure (TCLP).

FLASH: &gt; 99 (131) C (F)

**14. TRANSPORT INFORMATION**

**NOTE:** The flash point of this material is > 131F. Regulatory classifications vary as follows:

**DOT:** Flammable Liquid OR Combustible Liquid - (49CFR 173.120(h)(2))  
**OSHA:** Combustible Liquid  
**ATA/IMO:** Flammable Liquid

**USA DOT:**  
**SHIPPING NAME:** Diesel Fuel  
**HAZARD CLASS & DIV:** COMBUSTIBLE LIQUID  
**ID NUMBER:** NA1991  
**ERG NUMBER:** 128  
**PACKING GROUP:** PG III  
**STCC:** NE  
**DAANGEROUS WHEN WET:** No  
**POISON:** No  
**LABEL(s):** NA  
**PLACARD(s):** Combustible  
**PRODUCT NO:** NA  
**NAFOL III STATUS:** NA

In accordance with 49 CFR 173.150(f)(2), non-bulk quantities of this material (<119 gallons per container) may be shipped as non regulated for USA domestic shipments.

**AID/ADR:**  
**HAZARD CLASS:** 3  
**HAZARD SUB-CLASS:** 31(c)  
**LABEL:** 3  
**DANGER NUMBER:** 30  
**UN NUMBER:** 1202  
**SHIPPING NAME:** Gas Oil  
**REMARKS:** NA

**IMO:**  
**HAZARD CLASS & DIV:** 3  
**UN NUMBER:** 1202  
**PACKING GROUP:** PG III

(Section continued next page)

NOV. 25, 2002  
NOV. 25, 2002

4:48PM  
4:48PM

WRIGHT OIL & TIRE CO

NO. 9395 P. 100/34

**ExxonMobil**

# MATERIAL SAFETY DATA BULLETIN

250002001

WILS DIESEL POWER + W/DIE

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SHIPPING NAME: Gas Oil  
LABEL(s): Flammable Liquid  
HARPOL III STATUS: NA

ICAO/IATA:  
HAZARD CLASS & DIV: 3  
ID/UN Number: 1202  
PACKING GROUP: PG III  
SHIPPING NAME: Gas Oil  
SUBSIDIARY RISK: NA  
LABEL(s): Flammable Liquid

STATIC ACCUMULATOR (50 picosiemans or less): YES

## 15. REGULATORY INFORMATION

US OSHA HAZARD COMMUNICATION STANDARD: Product assessed in accordance with OSHA 29 CFR 1910.1200 and determined to be hazardous.

EU Labeling: Product is dangerous as defined by the European Union Dangerous Substances/Preparations Directives.

Symbol: Xn Harmful.

Risk Phrase(s): R40-65-66.

Limited evidence of a carcinogenic effect. Harmful: may cause lung damage if swallowed. Repeated exposure may cause skin dryness or cracking.

Safety Phrase(s): S24-2-36/37-62.

Avoid contact with skin. Keep out of the reach of children. Wear suitable protective clothing and gloves. If swallowed, do not induce vomiting; seek medical advice immediately and show this container or label.

Contains: Gas oil - unspecified.

Governmental Inventory Status: All components comply with TSCA, and EINECS/ELINCS.

U.S. Superfund Amendments and Reauthorization Act (SARA) Title III: This product contains no "EXTREMELY HAZARDOUS SUBSTANCES".

SARA (311/312) REPORTABLE HAZARD CATEGORIES:  
FIRE CHRONIC ACUTE

This product contains the following SARA (313) Toxic Release Chemicals:

| CHEMICAL NAME        | CAS NUMBER | CONC. |
|----------------------|------------|-------|
| POLYNUCLEAR AROMATIC |            | 0.14  |

(Section continued next page)

Date Printed 11/8/02

Nov. 26 2002 08:51AM P10

FAX NO.: 2087851818

FROM: IDAHO ASPHALT SUPPLY

**ExxonMobil****MATERIAL SAFETY DATA BULLETIN**

288292001

FILE DIESEL POWER + W/DYE

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**HYDROCARBONS (COMPONENT ANALYSIS)**

The following product ingredients are cited on the lists below:

| CHEMICAL NAME     | CAS NUMBER | LIST CITATIONS |
|-------------------|------------|----------------|
| DIESEL OIL, C9-20 | 58334-10-5 | 21, 26         |

## --- REGULATORY LISTS SEARCHED ---

|             |             |             |                 |           |
|-------------|-------------|-------------|-----------------|-----------|
| 1=ACQIN ALL | 6=IARC 1    | 11=TECA 4   | 16=CA P65 CARC  | 21=LA RTK |
| 2=ACQIN A1  | 7=IARC 2A   | 12=TECA 3a2 | 17=CA P65 REPRO | 22=MI 293 |
| 3=ACQIN A2  | 8=IARC 2B   | 13=TECA 3b  | 18=CA RTK       | 23=NY RTK |
| 4=NTF CARC  | 9=OSHA CARC | 14=TECA 6   | 19=NY RTK       | 24=NJ RTK |
| 5=NTF SUS   | 10=OSHA S   | 15=TECA 12b | 20=IL RTK       | 25=PA RTK |
|             |             |             |                 | 26=RI RTK |

Code key: CARC=Carcinogen; SUS=Suspected Carcinogen; REPRO=Reproductive

**10. OTHER INFORMATION**

USE: DIESEL FUEL

NOTE: PRODUCTS OF EXXON MOBIL CORPORATION AND ITS AFFILIATED COMPANIES ARE NOT FORMULATED TO CONTAIN PCBs.

Health studies have shown that many hydrocarbons pose potential human health risks which may vary from person to person. Information provided on this MSDS reflects intended use. This product should not be used for other applications. In any case, the following advice should be considered:

**INJECTION INJURY WARNING:** If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

Precautionary Label Text:

CONTAINS DIESEL OIL... C9-20

WARNING!

COMBUSTIBLE LIQUID AND VAPOR. RESPIRATORY IRRITATION, HEADACHE, DIZZINESS, NAUSEA, LOSS OF CONSCIOUSNESS, AND IN CASES OF EXTREME EXPOSURE, POSSIBLY DEATH. LOW VISCOSITY MATERIAL-IF SWALLOWED, MAY BE

(Section continued next page)

NOV. 25, 2002 4:49PM

WRIGHT OIL & TIRE CO

NO. 99915 P. 12/2/39

**ExxonMobil**

## MATERIAL SAFETY DATA BULLETIN

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#11# DIESEL POWER + W/DYE

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**ASPIRATED AND CAN CAUSE SERIOUS OR FATAL LUNG DAMAGE.**

**MAY CAUSE SKIN CANCER ON PROLONGED, REPEATED SKIN CONTACT. ANIMAL SKIN ABSORPTION STUDIES RESULTED IN INCREASED MORTALITY, EFFECTS ON BODY WEIGHT, THE IMMUNE SYSTEM AND THE UNBORN CHILD. PROLONGED, REPEATED SKIN CONTACT MAY CAUSE IRRITATION. DIESEL EXHAUST MAY CAUSE LUNG CANCER.**

Keep away from heat and flame. Avoid prolonged or repeated overexposure by skin contact or inhalation. Use with adequate ventilation. Keep container closed. Keep out of reach of children.

**FIRST AID:** If inhaled, remove from further exposure. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation. In case of contact, remove contaminated clothing. Dry wipe the exposed skin and cleanse with waterless hand cleaner and follow by washing thoroughly with soap and water. For those providing assistance, avoid further skin contact to yourself and others. Wear impervious gloves. If swallowed, seek immediate medical attention. Do not induce vomiting. Only induce vomiting at the instruction of a physician.

This warning is given to comply with California Health and Safety Code 25249.6 and does not constitute an admission or a waiver of rights. This product contains a chemical known to the State of California to cause cancer, birth defects, or other reproductive harm. Chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm are created by the combustion of this product. Refer to product Material Safety Data Sheet for further safety and health information.

\*\*\*\*\*  
For Internal Use Only: MNO: 1\* 1\* 1\* 1\*, MFFEC: C, TAN: 155025-00,  
CMCS97: 979118, REQ: US - MARKETING, SAFE URM: C  
MMS Approval Date: 28SEP2001  
\*\*\*\*\*

(Section continued next page)

Date Printed 11/8/02

**ExxonMobil****MATERIAL SAFETY DATA BULLETIN**

388XP1001

OILS DIESEL POWER + W/DTE

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**ExxonMobil**

# MATERIAL SAFETY DATA BULLETIN

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## DIESEL #2, ON-ROAD (LOW SULFUR)

### 1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: DIESEL #2, ON-ROAD (LOW SULFUR)  
SUPPLIER: EXXONMOBIL OIL CORPORATION  
3225 GALLOWAY RD.  
FAIRFAX, VA 22037

24 - Hour Health and Safety Emergency (call collect): 800-737-4411  
24 - Hour Transportation Emergency (Primary) CHEMTREC: 800-424-9300  
(Secondary) 201-834-3296  
Product and Technical Information: 800-662-4525 703-846-6693  
MSDS Fax on Demand: 613-228-1467, other MSDS information: 856-224-4644

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL NAMES AND SYNONYMS: HYDROCARBONS AND ADDITIVES

GLOBALLY REPORTABLE MSDS INGREDIENTS:

| Substance Name           | Approx. Wt% |
|--------------------------|-------------|
| DIESEL FUEL (69334-30-5) | 100         |

COMPONENT(S) OF PRODUCT INGREDIENTS INCLUDE:

|                          |     |
|--------------------------|-----|
| ETHYL BENZENE (100-41-4) | 0.5 |
|--------------------------|-----|

NOTE: Composition may contain up to 0.5% performance additive.

See Section 8 for exposure limits (if applicable).

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**ExxonMobil**

## MATERIAL SAFETY DATA BULLETIN

2352P2001

DIESEL #2, ON-ROAD (LOW SULFUR)

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### 3. HAZARDS IDENTIFICATION

This product is considered hazardous according to regulatory guidelines (See Section 13).

**EMERGENCY OVERVIEW:** Clear (May Be Dyed) liquid. Material is combustible. Liquid can release vapors that readily form flammable mixtures at or above the flash point. Product can accumulate a static charge which may cause a fire or explosion. DOT HRC No. : 12B

**POTENTIAL HEALTH EFFECTS:** Respiratory irritation, dizziness, nausea, loss of consciousness, and in cases of extreme exposure, possibly death. Diesel exhaust may cause lung cancer. Prolonged, repeated skin contact may result in skin irritation or more serious skin disorders. Low viscosity material-if swallowed may enter the lungs and cause lung damage. Note: This product contains polycyclic aromatic hydrocarbons, some of which have been reported to cause skin cancer in test animals and in humans under conditions of poor personal hygiene and prolonged repeated contact.

For further health effects/toxicological data, see Section 11.

### 4. FIRST AID MEASURES

**EYE CONTACT:** Flush thoroughly with water. If irritation occurs, call a physician.

**SKIN CONTACT:** Remove contaminated clothing. Dry wipe exposed skin and cleanse yourself with waterless hand cleaner and follow by washing thoroughly with soap and water. For those providing assistance, avoid further contact to yourself or others. Wear impervious gloves. Launder contaminated clothing separately before reuse. Discard contaminated articles that cannot be laundered. (See Section 16 - Injection Injury)

**INHALATION:** Remove from further exposure. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with mechanical device or use mouth-to-mouth resuscitation.

**INGESTION:** Seek immediate medical attention. Do not induce vomiting.

**NOTE TO PHYSICIANS:** Material if aspirated into the lungs may cause chemical pneumonitis. PRE-EXISTING MEDICAL CONDITIONS WHICH MAY BE AGGRAVATED BY EXPOSURE: Hydrocarbon solvents/Petroleum Hydrocarbons- Skin contact may aggravate an existing dermatitis.

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**ExxonMobil**

## MATERIAL SAFETY DATA BULLETIN

23SEP2001

DIESEL #2, ON-ROAD (LOW SULFUR)

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### 5. FIRE-FIGHTING MEASURES

**EXTINGUISHING MEDIA:** Carbon dioxide, foam, dry chemical and water fog.

**SPECIAL FIRE FIGHTING PROCEDURES:** Water may be ineffective, but water should be used to keep fire-exposed containers cool. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply.

**SPECIAL PROTECTIVE EQUIPMENT:** For fires in enclosed areas, fire fighters must use self-contained breathing apparatus.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** Material is combustible. Liquid can release vapors that readily form flammable mixtures at or above the flash point. Product can accumulate a static charge which may cause a fire or explosion.

**COMBUSTION PRODUCTS:** Fumes, smoke, carbon monoxide, sulfur oxides, aldehydes and other decomposition products, in the case of incomplete combustion.

Flash Point C(F): > 55(131) (ASTM D-93).

Flammable limits (approx.% vol.in air) - LEL: 0.6%, UEL: 7.0%

NFPA HAZARD ID: Health: 1, Flammability: 2, Reactivity: 0

### 6. ACCIDENTAL RELEASE MEASURES

**NOTIFICATION PROCEDURES:** Report spills/releases as required to appropriate authorities. U.S. Coast Guard and EPA regulations require immediate reporting of spills/releases that could reach any waterway including intermittent dry creeks. Report spill/release to Coast Guard National Response Center toll free number (800) 424-8802. In case of accident or road spill notify CHEMTREC (800) 424-9300.

**PROCEDURES IF MATERIAL IS RELEASED OR SPILLED:**

**LAND SPILL:** Eliminate sources of ignition. Shut off source taking normal safety precautions. Take measures to minimize the effects on ground water. Recover by pumping using explosion-proof equipment or contain spilled liquid with sand or other suitable absorbent and remove mechanically into containers. If necessary, dispose of adsorbed residues as directed in Section 13.

**WATER SPILL:** Eliminate sources of ignition and warn other ships in the vicinity to stay clear. Notify port and other relevant authorities. Confine with booms if skimming equipment is available to recover the spill. Otherwise disperse in unconfined waters, if permitted by local authorities and environmental agencies. If permitted by regulatory authorities the use of suitable dispersants should be considered where recommended in local oil spill procedures.

**ENVIRONMENTAL PRECAUTIONS:** Prevent material from entering sewers, water sources or low lying areas; advise the relevant authorities if it has, or if it contaminates soil/vegetation.

**PERSONAL PRECAUTIONS:** See Section 8

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**ExxonMobil**

## MATERIAL SAFETY DATA BULLETIN

23SEP2001

DIESEL #2, ON-ROAD (LOW SULFUR)

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### 7. HANDLING AND STORAGE

**HANDLING:** Keep product away from high energy ignition sources, heat, sparks, pilot lights, static electricity, and open flame. Harmful in contact with or if absorbed through the skin. Avoid inhalation of vapors or mists. Use in well ventilated area away from all ignition sources. See Section 8 for additional personal protection advice when handling this product.

**STORAGE:** Store in a cool area. Avoid sparking conditions. Ground and bond all transfer equipment.

**SPECIAL PRECAUTIONS:** To prevent and minimize fire or explosion risk from static accumulation and discharge, effectively bond and/or ground product transfer system. Do not use electronic devices (including but not limited to cellular phones, computers, calculators, pagers, etc.) in or around any fueling operation or storage area unless the devices are certified intrinsically safe by an approved national testing agency and to the safety standards required by national and/or local laws and regulations. Electrical equipment and fittings must comply with local fire prevention regulations for this class of product. Use the correct grounding procedures. Refer to national or local regulations covering safety at petroleum handling and storage areas for this product.

**EMPTY CONTAINER WARNING:** Empty containers retain residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Do not attempt to refill or clean container since residue is difficult to remove. Empty drums should be completely drained, properly bunged and promptly returned to a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### OCCUPATIONAL EXPOSURE LIMITS:

ExxonMobil recommends an 8-hour time-weighted average (TWA) exposure of 500 mg/m<sup>3</sup> total vapor/aerosol (approx. 100 ppm vapor) or 5 mg/m<sup>3</sup> stable aerosols.

| Substance Name (CAS-No.) | Source | ---TWA--- |                   | ---STEL--- |                   | NOTE |
|--------------------------|--------|-----------|-------------------|------------|-------------------|------|
|                          |        | ppm       | mg/m <sup>3</sup> | ppm        | mg/m <sup>3</sup> |      |
| ETHYL BENZENE (100-41-4) | OSHA   | 100       | 435               | 125        | 545               |      |
|                          | ACGIH  | 100       | 434               | 125        | 543               |      |

(Section continued next page)

Date Printed 11/8/02

**ExxonMobil**
**MATERIAL SAFETY DATA BULLETIN**

R30002001

DIESEL #2, ON-ROAD (LOW SULFUR)

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NOTE: Limits shown for guidance only. Follow applicable regulations.

**VENTILATION:** Use in well ventilated area with local exhaust ventilation. Ventilation equipment must be explosion proof. Use away from all ignition sources.

**RESPIRATORY PROTECTION:** Approved respiratory equipment must be used when airborne concentrations are unknown or exceed the recommended exposure limit. Self-contained breathing apparatus may be required for use in confined or enclosed spaces.

**EYE PROTECTION:** If splash with liquid is possible, chemical type goggles should be worn.

**SKIN PROTECTION:** Impervious gloves must be worn. If contact is likely oil impervious clothing must be worn. Good personal hygiene practices should always be followed.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Typical physical properties are given below. Consult Product Data Sheet for specific details.

**APPEARANCE:** Liquid

**COLOR:** Clear (May Be Dyed)

**ODOR:** Hydrocarbon

**ODOR THRESHOLD-ppm:** NE

**pH:** NA

**BOILING POINT C(F):** > 149(300)

**MELTING POINT C(F):** NA

**FLASH POINT C(F):** > 55(131) (ASTM D-93)

**FLAMMABILITY (solids):** NE

**AUTO FLAMMABILITY C(F):** NE

**EXPLOSIVE PROPERTIES:** NA

**OXIDIZING PROPERTIES:** NA

**VAPOR PRESSURE-mmHg 20 C:** 0.5

**VAPOR DENSITY:** > 2.0

**EVAPORATION RATE:** NE

**RELATIVE DENSITY, 15/4 C:** 0.82-0.87

**SOLUBILITY IN WATER:** Negligible

**PARTITION COEFFICIENT:** > 3.5

**VISCOSITY AT 40 C, cst:** > 1.0

**VISCOSITY AT 100 C, cst:** NE

**POUR POINT C(F):** < -7(20)

**FREEZING POINT C(F):** NE

**VOLATILE ORGANIC COMPOUND:** NE

**DMSO EXTRACT, IP-346 (WT.%):** NA

NA-NOT APPLICABLE NE-NOT ESTABLISHED D-DECOMPOSES

FOR FURTHER TECHNICAL INFORMATION, CONTACT YOUR MARKETING REPRESENTATIVE

**ExxonMobil**

## MATERIAL SAFETY DATA BULLETIN

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DIESEL #2, ON-ROAD (LOW SULFUR)

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### 10. STABILITY AND REACTIVITY

**STABILITY (THERMAL, LIGHT, ETC.):** Stable.

**CONDITIONS TO AVOID:** Extreme heat and high energy sources of ignition.

**INCOMPATIBILITY (MATERIALS TO AVOID):** Halogens, strong acids, alkalies, and oxidizers.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Product does not decompose at ambient temperatures.

**HAZARDOUS POLYMERIZATION:** Will not occur.

### 11. TOXICOLOGICAL DATA

#### ---ACUTE TOXICOLOGY---

**ORAL TOXICITY (RATS):** Practically non-toxic (LD50: greater than 2000 mg/kg). ---Based on testing of similar products and/or the components.

**DERMAL TOXICITY (RABBITS):** Practically non-toxic (LD50: greater than 2000 mg/kg). ---Based on testing of similar products and/or the components.

**INHALATION TOXICITY (RATS):** Practically non-toxic (LC50: greater than 5 mg/l). ---Based on testing of similar products and/or the components.

**EYE IRRITATION (RABBITS):** Practically non-irritating. (Draize score: greater than 6 but 15 or less). ---Based on testing of similar products and/or the components.

**SKIN IRRITATION (RABBITS):** Practically non-irritating. (Primary Irritation Index: greater than 0.5 but less than 3). ---Based on testing of similar products and/or the components.

#### ---SUBCHRONIC TOXICOLOGY (SUMMARY)---

Repeated dermal application of middle distillates, heating oils and diesel oils to rabbits for 2-4 weeks at up to 1 gm/kg resulted in strong to severe skin irritation with some weight loss at the higher dose. Toxic effects ranging from weight loss to mortality was observed in rabbits treated repeatedly with very high doses (6 gm/kg) of these oils. Repeated inhalation exposure of middle distillate and diesel vapor and aerosol to rats for 2-4 weeks at up to 6 mg/l resulted in respiratory tract irritation, lung changes/infiltration/accumulation, and some reduction in lung function.

#### ---REPRODUCTIVE TOXICOLOGY (SUMMARY)---

Diesel fuel vapors were tested in an inhalation teratology (developmental toxicity) study in rats and when only minimal maternal toxicity was observed, no fetotoxic or developmental effects were observed. A developmental toxicity study of dermally applied middle distillates did indicate fetotoxicity (reduced litter size, litter weight, increased resorptions) at doses that also caused significant maternal toxicity.

#### ---CHRONIC TOXICOLOGY (SUMMARY)---

(Section continued next page)

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Diesel fuel, heating oil and middle distillates have been shown to be carcinogenic in lifetime mouse skin painting bioassays. While in some cases, the tumor incidence is low in the test populations and possibly associated with skin irritation, concurrent evidence from short-term predicative tests (Modified Ames) does indicate some level of mutagenic activity associated with levels of polycyclic aromatic compounds in certain test samples.

## ---SENSITIZATION (SUMMARY)---

Middle distillate oils were not skin sensitizers when tested in a Modified Buehler Guinea Pig Sensitization Assay.

## ---OTHER TOXICOLOGY DATA---

Overexposure to diesel exhaust fumes may result in eye irritation, headaches, nausea, and respiratory irritation. Animal studies involving lifetime exposure to high levels of diesel exhaust have produced variable results, with some studies indicating a potential for lung cancer. Limited evidence from epidemiological studies suggest an association between long-term occupational exposure to diesel engine emissions and lung cancer. Diesel engine exhaust typically consists of gases and particulates, including carbon dioxide, carbon monoxide, nitrogen compounds, oxides of sulfur, and hydrocarbons. Diesel exhaust composition will vary with fuel, engine type, load cycle, engine maintenance, tuning and exhaust gas treatment. Use of adequate ventilation and/or respiratory protection in the presence of diesel exhaust is recommended to minimize exposures. This product contains ethylbenzene. The International Agency for Research on Cancer (IARC) has evaluated ethylbenzene and classified it as possibly carcinogenic to humans (Group 2B) based on sufficient evidence for carcinogenicity in experimental animals, but inadequate evidence for cancer in exposed humans.

**12. ECOLOGICAL INFORMATION**

**ENVIRONMENTAL FATE AND EFFECTS:** The majority of the components in this product would be expected to be inherently biodegradable. The constituents of diesel fuels/heating oil which are volatilized will photodegrade in the atmosphere. The less volatile, more water-soluble components which are aromatic hydrocarbons will also undergo aqueous photodegradation. Based on test results for similar products, this substance may be toxic to aquatic organisms such as algae and daphnia (EL50/ IrEL50 = 1-10 mg/L). This substance has also been shown to be toxic to specific fish species (EL50 = 1-10 mg/L for rainbow trout, Atlantic silverside).

Dissolution of the higher molecular weight hydrocarbon components in water will be limited, but losses through sediment adsorption may be significant.

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**13. DISPOSAL CONSIDERATIONS**

**WASTE DISPOSAL:** Product is suitable for burning for fuel value in compliance with applicable laws and regulations.

**RCRA INFORMATION:** Disposal of unused product may be subject to RCRA regulations (40 CFR 261). Disposal of the used product may also be regulated due to ignitability, corrosivity, reactivity, or toxicity as determined by the Toxicity Characteristic Leaching Procedure (TCLP).

**FLASH:** > 55 (131) C (F)

**14. TRANSPORT INFORMATION**

**NOTE:** The flash point of this material is > 131F. Regulatory classifications vary as follows:

**DOT:** Flammable Liquid OR Combustible Liquid - (49CFR 173.120 (b) (2))  
**OSHA:** Combustible Liquid  
**IATA/IMO:** Flammable Liquid

**USA DOT:**

|                                |                    |
|--------------------------------|--------------------|
| <b>SHIPPING NAME:</b>          | Diesel Fuel        |
| <b>HAZARD CLASS &amp; DIV:</b> | COMBUSTIBLE LIQUID |
| <b>ID NUMBER:</b>              | NA1993             |
| <b>ERG NUMBER:</b>             | 120                |
| <b>PACKING GROUP:</b>          | PG III             |
| <b>STCC:</b>                   | NE                 |
| <b>DANGEROUS WHEN WET:</b>     | No                 |
| <b>POISON:</b>                 | No                 |
| <b>LABEL(s):</b>               | NA                 |
| <b>PLACARD(s):</b>             | Combustible        |
| <b>PRODUCT RQ:</b>             | NA                 |
| <b>HARPOL III STATUS:</b>      | NA                 |

**RID/ADR:**

|                          |         |
|--------------------------|---------|
| <b>HAZARD CLASS:</b>     | 3       |
| <b>HAZARD SUB-CLASS:</b> | 31 (c)  |
| <b>LABEL:</b>            | 3       |
| <b>DANGER NUMBER:</b>    | 30      |
| <b>UN NUMBER:</b>        | 1202    |
| <b>SHIPPING NAME:</b>    | Gas Oil |
| <b>REMARKS:</b>          | NA      |

**IMO:**

|                                |                  |
|--------------------------------|------------------|
| <b>HAZARD CLASS &amp; DIV:</b> | 3                |
| <b>UN NUMBER:</b>              | 1202             |
| <b>PACKING GROUP:</b>          | PG III           |
| <b>SHIPPING NAME:</b>          | Gas Oil          |
| <b>LABEL(s):</b>               | Flammable Liquid |

(Section continued next page)

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## MATERIAL SAFETY DATA BULLETIN

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DIESEL #2, CK-HEAD (LOW SULFUR)

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MARPOL III STATUS: NA  
ICAO/IATA:  
HAZARD CLASS & DIV: 3  
ID/UN Number: 1202  
PACKING GROUP: PG III  
SHIPPING NAME: Gas Oil  
SUBSIDIARY RISK: NA  
LABEL(s): Flammable Liquid

STATIC ACCUMULATOR (50 picosiemens or less): YES

### 15. REGULATORY INFORMATION

US OSHA HAZARD COMMUNICATION STANDARD: Product assessed in accordance with OSHA 29 CFR 1910.1200 and determined to be hazardous.

EU Labeling: Product is dangerous as defined by the European Union Dangerous Substances/Preparations Directives.

Symbol: Xn Harmful.

Risk Phrase(s): R40-65-66.

Possible risks of irreversible effects. Harmful: may cause lung damage if swallowed. Repeated exposure may cause skin dryness or cracking.

Safety Phrase(s): S24-2-36/37-61-62.

Avoid contact with skin. Keep out of the reach of children. Wear suitable protective clothing and gloves. Avoid release to the environment. Refer to special instructions/safety data sheets. If swallowed, do not induce vomiting; seek medical advice immediately and show this container or label.

Contains: Gas oil - unspecified.

Governmental Inventory Status: All components comply with TSCA, EINECS/ELINCS, AICS, METI, DSL, KOREA, and PHILIPPINES.

U.S. Superfund Amendments and Reauthorization Act (SARA) Title III: This product contains no "EXTREMELY HAZARDOUS SUBSTANCES".

SARA (311/312) REPORTABLE HAZARD CATEGORIES:  
FIRE CHRONIC ACUTE

This product contains the following SARA (313) Toxic Release Chemicals:

| CHEMICAL NAME | CAS NUMBER | CONC. |
|---------------|------------|-------|
| -----         | -----      | ----- |

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ETHYL BENZENE (COMPONENT ANALYSIS)

100-41-4

0.5%

The following product ingredients are cited on the lists below:

| CHEMICAL NAME                            | CAS NUMBER | LIST CITATIONS |
|--|------------|----------------|
| NAPHTHALENE (COMPONENT ANALYSIS) (0.50%) | 91-20-3    | 22             |
| ETHYL BENZENE (COMPONENT ANALYSIS)       | 100-41-4   | 1, 8, 24       |
| DIESEL OIL..C9-20                        | 68834-20-5 | 21, 26         |

## --- REGULATORY LISTS SEARCHED ---

|             |             |             |                 |           |
|-------------|-------------|-------------|-----------------|-----------|
| 1-ACGIH ALL | 6-IARC 1    | 11-TSCA 4   | 16-CA P65 CARC  | 21-LA RTK |
| 2-ACGIH A1  | 7-IARC 2A   | 12-TSCA 5a2 | 17-CA P65 REPRO | 22-MI 293 |
| 3-ACGIH A2  | 8-IARC 2B   | 13-TSCA 5b  | 18-CA RTK       | 23-MN RTK |
| 4-NTP CARC  | 9-OSHA CARC | 14-TSCA 6   | 19-FL RTK       | 24-NJ RTK |
| 5-NTP SUS   | 10-OSHA E   | 15-TSCA 12b | 20-IL RTK       | 25-PA RTK |
|             |             |             |                 | 26-RI RTK |

Code key: CARC=Carcinogen; SUS=Suspected Carcinogen; REPRO=Reproductive.

**10. OTHER INFORMATION**

USE: DIESEL FUEL

NOTE: PRODUCTS OF EXXON MOBIL CORPORATION AND ITS AFFILIATED COMPANIES ARE NOT FORMULATED TO CONTAIN PCBs.

Health studies have shown that many hydrocarbons pose potential human health risks which may vary from person to person. Information provided on this MSDS reflects intended use. This product should not be used for other applications. In any case, the following advice should be considered:

**INJECTION INJURY WARNING:** If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

Precautionary Label Text:

CONTAINS DIESEL OIL.. C9-20

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## WARNING!

COMBUSTIBLE LIQUID AND VAPOR. RESPIRATORY IRRITATION, DIZZINESS, NAUSEA, LOSS OF CONSCIOUSNESS, AND IN CASES OF EXTREME EXPOSURE, POSSIBLY DEATH. LOW VISCOSITY MATERIAL-IF SWALLOWED, MAY BE ASPIRATED AND CAN CAUSE SERIOUS OR FATAL LUNG DAMAGE.

MAY CAUSE SKIN CANCER ON PROLONGED, REPEATED SKIN CONTACT. ANIMAL SKIN ABSORPTION STUDIES RESULTED IN INCREASED MORTALITY, EFFECTS ON BODY WEIGHT, THE IMMUNE SYSTEM AND THE UNBORN CHILD. PROLONGED, REPEATED SKIN CONTACT MAY CAUSE IRRITATION. DIESEL EXHAUST MAY CAUSE LUNG CANCER.

Keep away from heat and flame. Avoid prolonged or repeated overexposure by skin contact or inhalation. Use with adequate ventilation. Keep container closed. Keep out of reach of children.

**FIRST AID:** If inhaled, remove from further exposure. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation. In case of contact, remove contaminated clothing. Dry wipe the exposed skin and cleanse with waterless hand cleaner and follow by washing thoroughly with soap and water. For those providing assistance, avoid further skin contact to yourself and others. Wear impervious gloves. If swallowed, seek immediate medical attention. Do not induce vomiting. Only induce vomiting at the instruction of a physician.

This warning is given to comply with California Health and Safety Code 25249.6 and does not constitute an admission or a waiver of rights. This product contains a chemical known to the State of California to cause cancer, birth defects, or other reproductive harm. Chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm are created by the combustion of this product. Refer to product Material Safety Data Sheet for further safety and health information.

\*\*\*\*\*  
For Internal Use Only: MHC: 1\* 1\* 1\* 1\* 1\*, NPPEC: C, TRN: 123455-22,  
CMC897: EMER22, REQ: PS+C, SAFE USE: C  
MHS Approval Date: 23SEP2001  
\*\*\*\*\*

(Section continued next page)

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Date Printed 11/8/02

BEGIN MSDS ULT33528

-----  
SECTION 1        CHEMICAL PRODUCT AND COMPANY IDENTIFICATION  
-----

ULTRAMAR, INC.  
SAFETY AND LOSS CONTROL DEPARTMENT  
24-HOUR EMERGENCY TELEPHONE NUMBER

P.O. BOX 93102  
LONG BEACH, CALIFORNIA 90809-3102  
(562) 491-6795 OR (562) 435-5832

SUBSTANCE: NAPHTHA, FCC HEAVY

TRADE NAMES/SYNONYMS:

HEAVY NAPHTHA; HEAVY CAT NAPHTHA; ULT33528; RTECS QK7920000

CHEMICAL FAMILY: petroleums, hydrocarbons

CREATION DATE: Jun 30 1994

REVISION DATE: Mar 22 2001

-----  
SECTION 2        COMPOSITION, INFORMATION ON INGREDIENTS  
-----

COMPONENT: HEAVY CATALYTIC CRACKED NAPHTHA

CAS NUMBER: 64741-54-4

EC NUMBER (EINECS): 265-055-7

PERCENTAGE: 92.5

COMPONENT: O-XYLENE

CAS NUMBER: 95-47-6

EC NUMBER (EINECS): 202-422-2

PERCENTAGE: 4.3

COMPONENT: NAPHTHALENE

CAS NUMBER: 91-20-3

EC NUMBER (EINECS): 202-049-5

PERCENTAGE: 1.8

COMPONENT: TOLUENE

CAS NUMBER: 108-88-3

EC NUMBER (EINECS): 203-625-9

PERCENTAGE: 1.2

COMPONENT: SULFUR

CAS NUMBER: 7704-34-9

EC NUMBER (EINECS): 231-722-6

PERCENTAGE: 0.12

COMPONENT: BENZENE

CAS NUMBER: 71-43-2

EC NUMBER (EINECS): 200-753-7

PERCENTAGE: 0.1

OTHER CONTAMINANTS:

May contain traces ethylbenzene, hexane, cumene, and propylene.

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### SECTION 3 HAZARDS IDENTIFICATION

---

NFPA RATINGS (SCALE 0-4): HEALTH=3 FIRE=3 REACTIVITY=0

#### EMERGENCY OVERVIEW:

PHYSICAL DESCRIPTION: Clear liquid with a slight yellow tint.

MAJOR HEALTH HAZARDS: potentially fatal on contact with the skin, respiratory tract irritation, skin irritation, eye irritation, blood damage, central nervous system depression, cancer hazard (in humans)

PHYSICAL HAZARDS: Flammable liquid and vapor. Vapor may cause flash fire.

#### POTENTIAL HEALTH EFFECTS:

##### INHALATION:

SHORT TERM EXPOSURE: irritation, ringing in the ears, nausea, vomiting, chest pain, difficulty breathing, irregular heartbeat, headache, drowsiness, symptoms of drunkenness, disorientation, blurred vision, lung congestion, blood disorders, paralysis, convulsions, coma

LONG TERM EXPOSURE: hearing loss, visual disturbances, kidney damage, reproductive effects, brain damage, cancer

##### SKIN CONTACT:

SHORT TERM EXPOSURE: irritation, blisters, symptoms of drunkenness

LONG TERM EXPOSURE: same as effects reported in short term exposure, tingling sensation

##### EYE CONTACT:

SHORT TERM EXPOSURE: irritation

LONG TERM EXPOSURE: same as effects reported in short term exposure

##### INGESTION:

SHORT TERM EXPOSURE: nausea, vomiting, chest pain, headache, drowsiness, symptoms of drunkenness, disorientation, visual disturbances, lung congestion, liver damage, paralysis, convulsions, coma

LONG TERM EXPOSURE: impotence, cancer

#### CARCINOGEN STATUS:

OSHA: Yes

NTP: Yes

IARC: Yes

---

### SECTION 4 FIRST AID MEASURES

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INHALATION: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. Get immediate medical attention.

SKIN CONTACT: Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

EYE CONTACT: Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

INGESTION: Contact local poison control center or physician immediately. Never make an unconscious person vomit or drink fluids. When vomiting occurs, keep head lower than hips to help prevent aspiration. If person is unconscious, turn head to side. Get medical attention immediately.

---

## SECTION 5 FIRE FIGHTING MEASURES

---

FIRE AND EXPLOSION HAZARDS: Severe fire hazard. Vapor/air mixtures are explosive.

EXTINGUISHING MEDIA: regular dry chemical, carbon dioxide, water, regular foam

Large fires: Use regular foam or flood with fine water spray.

FIRE FIGHTING: Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For tank, rail car or tank truck: Evacuation radius: 800 meters (1/2 mile). Do not attempt to extinguish fire unless flow of material can be stopped first. Flood with fine water spray. Do not scatter spilled material with high-pressure water streams. Cool containers with water spray until well after the fire is out. Apply water from a protected location or from a safe distance. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.

FLASH POINT: 48 F (9 C)

LOWER FLAMMABLE LIMIT: 0.97 g/L @ 24 C

FLAMMABILITY CLASS (OSHA): IB

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## SECTION 6 ACCIDENTAL RELEASE MEASURES

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### WATER RELEASE:

Subject to California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65). Keep out of water supplies and sewers.

### OCCUPATIONAL RELEASE:

Avoid heat, flames, sparks and other sources of ignition. Stop leak if possible without personal risk. Reduce vapors with water spray. Small spills: Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal. Large spills: Dike for later disposal. Remove sources of ignition. Keep unnecessary people away, isolate hazard area and deny entry. Notify Local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (U.S. SARA Section 304). If release occurs in the U.S. and is reportable under CERCLA Section 103, notify the National Response Center at (800)424-8802 (USA) or (202)426-2675 (USA).

---

## SECTION 7 HANDLING AND STORAGE

---

STORAGE: Store and handle in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.106. Grounding and bonding required. Keep separated from incompatible substances.

-----  
SECTION 8      EXPOSURE CONTROLS, PERSONAL PROTECTION  
-----

EXPOSURE LIMITS:

HEAVY CATALYTIC CRACKED NAPHTHA:

PETROLEUM DISTILLATES:

500 ppm (2000 mg/m3) OSHA TWA

400 ppm (1600 mg/m3) OSHA TWA (vacated by 58 FR 35338, June 30, 1993)

MEASUREMENT METHOD: Charcoal tube; Carbon disulfide; Gas chromatography with flame ionization detection; NIOSH IV # 1550, Naphthas

O-XYLENE:

XYLENE:

100 ppm (435 mg/m3) OSHA TWA

150 ppm (651 mg/m3) OSHA STEL (vacated by 58 FR 35338, June 30, 1993)

100 ppm ACGIH TWA

150 ppm ACGIH STEL

100 ppm (435 mg/m3) NIOSH recommended TWA 10 hour(s)

150 ppm (655 mg/m3) NIOSH recommended STEL

440 mg/m3 (100 ml/m3) DFG MAK (peak limitation category-II, 1) (skin)

100 ppm (441 mg/m3) UK OES TWA (skin)

150 ppm (662 mg/m3) UK OES STEL (skin)

MEASUREMENT METHOD: Charcoal tube; Carbon disulfide; Gas chromatography with flame ionization detection; NIOSH IV # 1501, Aromatic Hydrocarbons

NAPHTHALENE:

10 ppm (50 mg/m3) OSHA TWA

15 ppm (79 mg/m3) OSHA STEL (vacated by 58 FR 35338, June 30, 1993)

10 ppm ACGIH TWA (skin)

15 ppm ACGIH STEL (skin)

10 ppm (50 mg/m3) NIOSH recommended TWA 10 hour(s)

15 ppm (75 mg/m3) NIOSH recommended STEL

50 mg/m3 (10 ml/m3) AGS TRK

50 mg/m3 (10 ml/m3) EC MAK

10 ppm (53 mg/m3) UK OES TWA

15 ppm (80 mg/m3) UK OES STEL

MEASUREMENT METHOD: Charcoal tube; Carbon disulfide; Gas chromatography with flame ionization detection; NIOSH IV # 1501, Aromatic Hydrocarbons

TOLUENE:

200 ppm OSHA TWA

300 ppm OSHA ceiling

500 ppm OSHA peak 10 minute(s)

100 ppm (377 mg/m3) OSHA TWA (vacated by 58 FR 35338, June 30, 1993)

150 ppm (565 mg/m3) OSHA STEL (vacated by 58 FR 35338, June 30, 1993)

50 ppm ACGIH TWA (skin)

100 ppm (375 mg/m3) NIOSH recommended TWA 10 hour(s)

150 ppm (560 mg/m3) NIOSH recommended STEL

190 mg/m3 (50 ml/m3) DFG MAK (peak limitation category-II, 2) (skin)

50 ppm (191 mg/m3) UK OES TWA (skin)

150 ppm (574 mg/m3) UK OES STEL (skin)

MEASUREMENT METHOD: Charcoal tube; Carbon disulfide; Gas chromatography with flame ionization detection; NIOSH IV # 1500, Hydrocarbons; ALSO # 4000, # 1501

**BENZENE:**

1 ppm OSHA TWA  
5 ppm OSHA STEL 15 minute(s)  
0.5 ppm OSHA action level  
0.5 ppm ACGIH TWA (skin)  
2.5 ppm ACGIH STEL (skin)  
0.1 ppm NIOSH recommended TWA 10 hour(s)  
1 ppm NIOSH recommended STEL  
3.2 mg/m<sup>3</sup> (1 ml/m<sup>3</sup>) AGS TRK (skin)  
3 ppm (9.7 mg/m<sup>3</sup>) UK MEL TWA

MEASUREMENT METHOD: Charcoal tube; Carbon disulfide; Gas chromatography with flame ionization detection; NIOSH IV # 1500, Hydrocarbons; ALSO # 3700, # 1501

**VENTILATION:** Provide local exhaust ventilation system. Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Ensure compliance with applicable exposure limits.

**EYE PROTECTION:** Wear splash resistant safety goggles. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

**CLOTHING:** Wear appropriate chemical resistant clothing. Remove any chemical soaked clothing immediately.

**GLOVES:** Wear appropriate chemical resistant gloves.

**RESPIRATOR:** Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use.

Any chemical cartridge respirator with organic vapor cartridge(s).

Any chemical cartridge respirator with a full facepiece and organic vapor cartridge(s).

Any air-purifying respirator with a full facepiece and an organic vapor canister.

For Unknown Concentrations or Immediately Dangerous to Life or Health -

Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply.

Any self-contained breathing apparatus with a full facepiece.

-----  
**SECTION 9      PHYSICAL AND CHEMICAL PROPERTIES**  
-----

**PHYSICAL DESCRIPTION:** Clear liquid with a slight yellow tint.

**BOILING POINT:** 194 F (90 C) (initial boiling point)

**FREEZING POINT:** liquid at room temperature

**VAPOR PRESSURE:** 2.5 psi @ 38 C

**VAPOR DENSITY:** Not available

**SPECIFIC GRAVITY (water=1):** 0.8534 @ 16 C

**WATER SOLUBILITY:** insoluble

**PH:** Not available

VOLATILITY: Not available  
ODOR THRESHOLD: Not available  
EVAPORATION RATE: Not available  
VISCOSITY: 1.03 cSt @ 16 C  
COEFFICIENT OF WATER/OIL DISTRIBUTION: Not available

-----  
SECTION 10 STABILITY AND REACTIVITY  
-----

REACTIVITY: Stable at normal temperatures and pressure.

CONDITIONS TO AVOID: Avoid heat, flames, sparks and other sources of ignition.  
Containers may rupture or explode if exposed to heat. Keep out of water  
supplies and sewers.

INCOMPATIBILITIES: oxidizing materials

HEAVY CATALYTIC CRACKED NAPHTHA:  
OXIDIZERS (STRONG): Fire and explosion hazard.

HAZARDOUS DECOMPOSITION:  
Thermal decomposition products: oxides of carbon

POLYMERIZATION: Will not polymerize.

-----  
SECTION 11 TOXICOLOGICAL INFORMATION  
-----

NAPHTHA, FCC HEAVY:

IRRITATION DATA:

500 mg skin-rabbit severe

TOXICITY DATA:

>5 gm/kg oral-rat LD; >5700 mg/m<sup>3</sup>/4 hour(s) inhalation-rat LC; >2 gm/kg  
skin-rabbit LD; 10 gm/kg/4 week(s) intermittent oral-rat TDLo

HEAVY CATALYTIC CRACKED NAPHTHA:

IRRITATION DATA:

500 mg skin-rabbit severe

TOXICITY DATA:

>5 gm/kg oral-rat LD; >5700 mg/m<sup>3</sup>/4 hour(s) inhalation-rat LC; >2 gm/kg  
skin-rabbit LD; 10 gm/kg/4 week(s) intermittent oral-rat TDLo

LOCAL EFFECTS:

Irritant: inhalation, skin, eye

TARGET ORGANS: central nervous system

O-XYLENE:

TOXICITY DATA:

3617 mg/kg oral-rat LD50 (Phillips); 6125 ppm/12 hour(s) inhalation-human  
LCLo; 5 gm/kg oral-rat LDLo; 6125 ppm/12 hour(s) inhalation-rat LCLo; 30  
gm/m<sup>3</sup> inhalation-mouse LCLo; 1550 ul/kg intraperitoneal-mouse LD50; 1500  
mg/kg intraperitoneal-mammal LDLo; 2500 mg/kg subcutaneous-mammal LDLo

CARCINOGEN STATUS: IARC: Human Inadequate Evidence, Animal Inadequate  
Evidence, Group 3; ACGIH: A4 -Not Classifiable as a Human Carcinogen

LOCAL EFFECTS:

Irritant: inhalation, skin, eye

ACUTE TOXICITY LEVEL:

Moderately Toxic: ingestion

TARGET ORGANS: central nervous system

REPRODUCTIVE EFFECTS DATA:

150 mg/m3 inhalation-rat TCLo/24 hour(s) 7-14 day(s) pregnant female continuous; 1500 mg/m3 inhalation-rat TCLo/24 hour(s) 7-14 day(s) pregnant female continuous; 3000 mg/m3 inhalation-rat TCLo/24 hour(s) 7-14 day(s) pregnant female continuous; 500 mg/kg intraperitoneal-rat TDLo 2 day(s) male; 500 mg/m3 inhalation-mouse TCLo/12 hour(s) 6-15 day(s) pregnant female continuous

ADDITIONAL DATA: Alcohol may enhance the toxic effects. Stimulants such as epinephrine may induce ventricular fibrillation.

NAPHTHALENE:

IRRITATION DATA:

495 mg open skin-rabbit mild; 100 mg eyes-rabbit mild

TOXICITY DATA:

100 mg/kg oral-child LDLo; 29 mg/kg unreported-human LDLo; 74 mg/kg unreported-man LDLo; 490 mg/kg oral-rat LD50; >340 mg/m3/1 hour(s) inhalation-rat LC50; >2500 mg/kg skin-rat LD50; 316 mg/kg oral-mouse LD50; 150 mg/kg intraperitoneal-mouse LD50; 969 mg/kg subcutaneous-mouse LD50; 100 mg/kg intravenous-mouse LD50; 400 mg/kg oral-dog LDLo; 1 gm/kg oral-cat LDLo; 3 gm/kg oral-rabbit LDLo; >20 gm/kg skin-rabbit LD50; 1200 mg/kg oral-guinea pig LD50; 20 gm/kg/11 week(s) intermittent oral-rat TDLo; 10 gm/kg/10 day(s) intermittent oral-rat TDLo; 1680 mg/kg/28 day(s) continuous oral-rat TDLo; 12450 mg/kg/9 week(s) intermittent oral-rat TDLo; 3738 mg/kg/14 day(s) continuous oral-mouse TDLo; 11970 mg/kg/90 day(s) continuous oral-mouse TDLo; 10 gm/kg/10 day(s) intermittent oral-rabbit TDLo; 2 gm/kg/2 day(s) intermittent intraperitoneal-rabbit TDLo

CARCINOGEN STATUS: ACGIH: A4 -Not Classifiable as a Human Carcinogen

Repeated inhalation exposure resulted in no evidence of carcinogenic activity in male mice and some evidence of carcinogenic activity in female mice, as indicated by the increased incidences of pulmonary alveolar/bronchiolar adenomas (NTP TR-410). A two year inhalation study with rats resulted in clear evidence of carcinogenic activity based on increased incidences of respiratory epithelial adenoma and olfactory epithelial neuroblastoma of the nose (NTP TR-500).

LOCAL EFFECTS:

Irritant: inhalation, skin, eye

ACUTE TOXICITY LEVEL:

Toxic: ingestion

TARGET ORGANS: blood, immune system (sensitizer)

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: metabolic disorders

TUMORIGENIC DATA:

3500 mg/kg subcutaneous-rat TDLo/12 week(s) intermittent; 30 ppm inhalation-mouse TCLo/6 hour(s)-2 year(s) intermittent

MUTAGENIC DATA:

specific locus test - *Drosophila melanogaster* oral 5 mmol/L; micronucleus test - human lymphocyte 30 mg/L; cytogenetic analysis - hamster ovary 30 mg/L; sister chromatid exchange - hamster ovary 15 mg/L

REPRODUCTIVE EFFECTS DATA:

4500 mg/kg oral-rat TDLo 6-15 day(s) pregnant female continuous; 5925 mg/kg intraperitoneal-rat TDLo 1-15 day(s) pregnant female continuous; 2400 mg/kg oral-mouse TDLo 7-14 day(s) pregnant female continuous

ADDITIONAL DATA: May cross the placenta.

TOLUENE:

**IRRITATION DATA:**

300 ppm eyes-human; 435 mg skin-rabbit mild; 500 mg skin-rabbit moderate; 20 mg/24 hour(s) skin-rabbit moderate; 870 ug eyes-rabbit mild; 2 mg/24 hour(s) eyes-rabbit severe; 100 mg/30 second(s) rinsed eyes-rabbit mild

**TOXICITY DATA:**

719 ul/kg oral-man LDLo; 50 mg/kg oral-human LDLo; 200 ppm inhalation-human TCLo; 100 ppm inhalation-man TCLo; 636 mg/kg oral-rat LD50; 49 gm/m3/4 hour(s) inhalation-rat LC50; 1332 mg/kg intraperitoneal-rat LD50; 1960 mg/kg intravenous-rat LD50; 6900 mg/kg unreported-rat LD50; 400 ppm/24 hour(s) inhalation-mouse LC50; 59 mg/kg intraperitoneal-mouse LD50; 2250 mg/kg subcutaneous-mouse LD50; 2 gm/kg unreported-mouse LD50; 55000 ppm/40 minute(s) inhalation-rabbit LCLo; 14100 ul/kg skin-rabbit LD50; 130 mg/kg intravenous-rabbit LDLo; 1600 ppm inhalation-guinea pig LCLo; 500 mg/kg intraperitoneal-guinea pig LD50; 920 mg/kg subcutaneous-frog LDLo; 4 gm/kg oral-mammal LD50; 30 gm/m3 inhalation-mammal LC50; 1750 mg/kg intraperitoneal-mammal LDLo; 42380 mg/kg/49 day(s) intermittent oral-rat TDLo; 27645 mg/kg/3 week(s) intermittent oral-rat TDLo; 162 gm/kg/13 week(s) intermittent oral-rat TDLo; 1600 ppm/20 hour(s)-7 day(s) intermittent inhalation-rat TCLo; 12000 ppm/10 minute(s)-8 week(s) intermittent inhalation-rat TCLo; 300 ppm/6 hour(s)-2 year(s) intermittent inhalation-rat TCLo; 2500 ppm/6.5 hour(s)-15 week(s) intermittent inhalation-rat TCLo; 1500 ppm/6 hour(s)-26 week(s) intermittent inhalation-rat TCLo; 320 ppm/24 hour(s)-30 day(s) continuous inhalation-rat TCLo; 10500 mg/kg/7 day(s) intermittent subcutaneous-rat TDLo; 300 mg/m3/5 hour(s)-21 day(s) intermittent inhalation-rat TCLo; 2200 ppm/8 hour(s)-23 week(s) intermittent inhalation-rat TCLo; 11058 ug/kg/30 day(s) intermittent intraperitoneal-rat TDLo; 227 gm/kg/13 week(s) intermittent oral-mouse TDLo; 2940 mg/kg/4 week(s) continuous oral-mouse TDLo; 12000 ppm/10 minute(s)-8 week(s) intermittent inhalation-mouse TCLo; 1250 ppm/6 hour(s)-14 week(s) intermittent inhalation-mouse TCLo; 1000 ppm/6 hour(s)-20 day(s) intermittent inhalation-mouse TCLo; 8400 mg/kg/14 day(s) intermittent oral-mouse TDLo; 50 mg/m3/4 hour(s)-26 week(s) intermittent inhalation-rabbit TCLo

**CARCINOGEN STATUS:** IARC: Human Inadequate Evidence, Animal Evidence Suggesting Lack of Carcinogenicity, Group 3; ACGIH: A4 -Not Classifiable as a Human Carcinogen

**LOCAL EFFECTS:**

Irritant: inhalation, skin, eye

**ACUTE TOXICITY LEVEL:**

Moderately Toxic: ingestion

Slightly Toxic: inhalation, dermal absorption

**TARGET ORGANS:** nervous system

**MUTAGENIC DATA:**

unscheduled DNA synthesis - Escherichia coli 1 pph; unscheduled DNA synthesis - other microorganisms 1 pph 15 minute(s)-continuous; sex chromosome loss and non disjunction - Drosophila melanogaster oral 1 pph; other mutation test systems - grasshopper inhalation 20 pph 16 hour(s); DNA damage - rat liver 30 umol/L; cytogenetic analysis - rat inhalation 5400 ug/m3 16 week(s)-intermittent; cytogenetic analysis - rat subcutaneous 9600 mg/kg 12 day(s)-intermittent; micronucleus test - mouse oral 200 mg/kg; micronucleus test - mouse intraperitoneal 433 ug/kg 24 hour(s)

**REPRODUCTIVE EFFECTS DATA:**

7280 mg/kg oral-rat TDLo 6-19 day(s) pregnant female continuous; 9100 mg/kg oral-rat TDLo 6-19 day(s) pregnant female continuous; 16 ml/kg oral-rat TDLo 6-21 day(s) pregnant female continuous; 1500 mg/m3 inhalation-rat TCLo/24 hour(s) 1-8 day(s) pregnant female continuous; 1000 mg/m3 inhalation-rat TCLo/24 hour(s) 7-14 day(s) pregnant female continuous; 2000 ppm

inhalation-rat TCLO/6 hour(s) 7-17 day(s) pregnant female continuous; 800 mg/m3 inhalation-rat TCLO/6 hour(s) 14-20 day(s) pregnant female continuous; 1200 ppm inhalation-rat TCLO/6 hour(s) 9-12 day(s) pregnant female continuous; 9 gm/kg oral-mouse TDLo 6-15 day(s) pregnant female continuous; 15 gm/kg oral-mouse TDLo 6-15 day(s) pregnant female continuous; 30 gm/kg oral-mouse TDLo 6-15 day(s) pregnant female continuous; 500 mg/m3 inhalation-mouse TCLO/24 hour(s) 6-13 day(s) pregnant female continuous; 1000 ppm inhalation-mouse TCLO/6 hour(s) 2-17 day(s) pregnant female continuous; 400 ppm inhalation-mouse TCLO/7 hour(s) 7-16 day(s) pregnant female continuous; 200 ppm inhalation-mouse TCLO/7 hour(s) 7-16 day(s) pregnant female continuous; 1 gm/m3 inhalation-rabbit TCLO/24 hour(s) 7-20 day(s) pregnant female continuous; 100 ppm inhalation-rabbit TDLo/6 hour(s) 6-18 day(s) pregnant female continuous; 800 mg/m3 inhalation-hamster TCLO/6 hour(s) 6-11 day(s) pregnant female continuous

ADDITIONAL DATA: Alcohol may enhance the toxic effects. Stimulants such as epinephrine may induce ventricular fibrillation.

The metabolism of other solvents may be inhibited resulting in a potentiation of toxic effects of those chemicals. Uptake is directly proportional to the amount of body fat. Blood levels may be cumulative when exposure is extended.

#### BENZENE:

##### IRRITATION DATA:

15 mg/24 hour(s) open skin-rabbit mild; 20 mg/24 hour(s) skin-rabbit moderate; 88 mg eyes-rabbit moderate; 2 mg/24 hour(s) eyes-rabbit severe

##### TOXICITY DATA:

2 pph/5 minute(s) inhalation-human LCLO; 50 mg/kg oral-man LDLo; 150 ppm/1 year(s) intermittent inhalation-man TCLO; 100 ppm inhalation-human TCLO; 65 mg/m3/5 year(s) inhalation-human LCLO; 194 mg/kg unreported-man LDLo; 930 mg/kg oral-rat LD50; 10000 ppm/7 hour(s) inhalation-rat LC50; 1100 ug/kg intraperitoneal-rat LD50; 4700 mg/kg oral-mouse LD50; 9980 ppm inhalation-mouse LC50; 48 mg/kg skin-mouse LD50; 340 mg/kg intraperitoneal-mouse LD50; 2 gm/kg oral-dog LDLo; 146000 mg/m3 inhalation-dog LCLO; 170000 mg/m3 inhalation-cat LCLO; 45000 ppm/30 minute(s) inhalation-rabbit LCLO; >9400 ul/kg skin-rabbit LD50; 88 mg/kg intravenous-rabbit LDLo; >9400 ul/kg skin-guinea pig LD50; 527 mg/kg intraperitoneal-guinea pig LDLo; 1400 mg/kg subcutaneous-frog LDLo; 5700 mg/kg oral-mammal LD50; 20000 ppm/5 minute(s) inhalation-mammal LCLO; 1500 mg/kg intraperitoneal-mammal LDLo; 6600 mg/kg/27 week(s) intermittent oral-rat TDLo; 23 mg/m3/4 hour(s)-8 day(s) intermittent inhalation-rat TCLO; 300 ppm/6 hour(s)-13 week(s) intermittent inhalation-rat TCLO; 300 ppm/6 hour(s)-99 week(s) intermittent inhalation-rat TCLO; 17 gm/kg/17 week(s) intermittent oral-rat TDLo; 1000 ppm/7 hour(s)-28 week(s) intermittent inhalation-rat TCLO; 500 ppm/6 hour(s)-3 week(s) intermittent inhalation-rat TCLO; 12 gm/kg/6 week(s) intermittent subcutaneous-rat TDLo; 18 mg/kg/21 day(s) intermittent subcutaneous-rat TDLo; 2197 mg/kg/5 day(s) intermittent subcutaneous-rat TDLo; 13536 mg/kg/12 week(s) intermittent subcutaneous-rat TDLo; 5 ml/kg/10 day(s) intermittent intraperitoneal-rat TDLo; 4250 mg/kg/17 week(s) intermittent oral-mouse TDLo; 300 ppm/6 hour(s)-13 week(s) intermittent inhalation-mouse TCLO; 25 ppm/6 hour(s)-5 day(s) intermittent inhalation-mouse TCLO; 10 ppm/6 hour(s)-10 week(s) intermittent inhalation-mouse TCLO; 10 ppm/6 hour(s)-26 week(s) intermittent inhalation-mouse TCLO; 211 ppm/6 hour(s)-7 day(s) intermittent oral-mouse TCLO; 300 ppm/6 hour(s)-16 week(s) intermittent inhalation-mouse TCLO; 48 ppm/6 hour(s)-14 day(s) intermittent inhalation-mouse TCLO; 2197 mg/kg/5 day(s) intermittent subcutaneous-mouse TDLo; 100 ppm/6 hour(s)-72 week(s) intermittent inhalation-mouse TCLO; 500 mg/m3/3 hour(s)-13 week(s)

intermittent inhalation-rabbit TCLo; 100 ppm/6 hour(s)-3 week(s)

intermittent inhalation-pig TCLo

CARCINOGEN STATUS: OSHA: Carcinogen; NTP: Known Human Carcinogen; IARC: Human Sufficient Evidence, Animal Sufficient Evidence, Group 1; ACGIH: A1 -Confirmed Human Carcinogen; EC: Category 1; TRGS 905: K 1

Numerous case reports and series have suggested a relationship between exposure to benzene and the occurrence of various types of leukemia. Several case-control studies have also shown increased odds ratios for exposure to benzene, but mixed exposure patterns and poorly defined exposures render their interpretation difficult. Three independent cohort studies have demonstrated an increased incidence of acute nonlymphocytic leukemia in workers exposed to benzene.

#### LOCAL EFFECTS:

Irritant: inhalation, skin, eye

#### ACUTE TOXICITY LEVEL:

Highly Toxic: dermal absorption

Moderately Toxic: ingestion

Slightly Toxic: inhalation

TARGET ORGANS: immune system (blood), central nervous system

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: blood system disorders, immune system disorders or allergies

#### TUMORIGENIC DATA:

200 mg/m3 inhalation-man TCLo/78 week(s) intermittent; 10 ppm inhalation-human TCLo/8 hour(s)-10 year(s) intermittent; 52 gm/kg oral-rat TDLo/52 week(s) intermittent; 1200 ppm inhalation-rat TCLo/6 hour(s)-10 week(s) intermittent; 18250 mg/kg oral-mouse TDLo/2 year(s) continuous; 300 ppm inhalation-mouse TCLo/6 hour(s)-16 week(s) intermittent; 1200 gm/kg skin-mouse TDLo/49 week(s) intermittent; 1200 mg/kg intraperitoneal-mouse TDLo/8 week(s) intermittent; 600 mg/kg subcutaneous-mouse TDLo/17 week(s) intermittent; 670 mg/kg parenteral-mouse TDLo/19 week(s) intermittent; 150 ppm inhalation-human TC/15 minute(s)-8 year(s) intermittent; 52 gm/kg oral-rat TD/1 year(s) intermittent; 10 gm/kg oral-rat TD/52 week(s) intermittent; 600 mg/m3 inhalation-man TC/4 year(s) intermittent; 150 ppm inhalation-man TC/11 year(s) intermittent; 1200 ppm inhalation-mouse TC/6 hour(s)-10 week(s) intermittent; 2400 mg/kg oral-mouse TD/8 week(s) intermittent; 8 ppb inhalation-human TC/4 week(s) intermittent; 10 mg/m3 inhalation-human TC/11 year(s) intermittent; 300 ppm inhalation-mouse TC/6 hour(s)-16 week(s) intermittent

#### MUTAGENIC DATA:

mutation in microorganisms - Salmonella typhimurium 10 ppm (-S9); specific locus test - Drosophila melanogaster oral 11250 umol/L; sex chromosome loss and non disjunction - Drosophila melanogaster oral 7500 ppm; sex chromosome loss and non disjunction - Drosophila melanogaster multiple 27000 ppm; mutation in microorganisms - Saccharomyes cerevisiae 549 mg/L (+S9); mutation in microorganisms - Saccharomyes cerevisiae 275 mg/L (-S9); gene conversion and mitotic recombination - Saccharomyes cerevisiae 275 mg/L; sex chromosome loss and non disjunction - Aspergillus nidulans 35000 ppm; other mutation test systems - grasshopper inhalation 14 pph 16 hour(s); other mutation test systems - non-mammalian species intraperitoneal 75 gm/kg; DNA inhibition - human leukocyte 2200 umol/L; DNA inhibition - human HeLa cell 2200 umol/L; other mutation test systems - human lymphocyte 5 umol/L; cytogenetic analysis - human inhalation 125 ppm 1 year(s); cytogenetic analysis - human leukocyte 1 mmol/L 72 hour(s); cytogenetic analysis - human lymphocyte 1 mg/L; cytogenetic analysis - human unreported 10 ppm 4 week(s); sister chromatid exchange - human lymphocyte 200 umol/L; mutation in mammalian somatic cells - human lymphocyte 1 gm/L; micronucleus test - rat inhalation 1 ppm 6 hour(s); unscheduled DNA synthesis - rat liver 1 mmol/L; DNA

inhibition - rat inhalation 400 ppm; other mutation test systems - rat liver 1 mmol/L; other mutation test systems - rat bone marrow 1 mmol/L; other mutation test systems - rat subcutaneous 1 gm/L; other mutation test systems - rat subcutaneous 2200 mg/kg; cytogenetic analysis - rat inhalation 300 mg/m<sup>3</sup> 16 week(s)-intermittent; cytogenetic analysis - rat subcutaneous 2400 mg/kg 12 day(s)-intermittent; cytogenetic analysis - rat intraperitoneal 234 mg/kg; cytogenetic analysis - rat oral 39060 ug/kg; sister chromatid exchange - rat inhalation 3 ppm 6 hour(s); sister chromatid exchange - rat leukocyte 1 mmol/L; micronucleus test - mouse embryo 12500 nmol/L; micronucleus test - mouse subcutaneous 440 mg/kg; micronucleus test - mouse oral 40 mg/kg; micronucleus test - mouse intraperitoneal 264 mg/kg 24 hour(s); micronucleus test - mouse inhalation 10 ppm 6 hour(s); mutation in microorganisms - mouse lymphocyte 62500 ug/L (+S9); mutation in microorganisms - mouse embryo 2500 mg/L (+S9); morphological transformation - mouse embryo 1 gm/L; morphological transformation - mouse fibroblast 150 gm/L; DNA damage - mouse lymphocyte 3840 umol/L; DNA adduct - mouse intraperitoneal 2640 mg/kg 3 day(s)-continuous; other mutation test systems - mouse oral 2 gm/kg; other mutation test systems - mouse other cell types 5 mmol/L; DNA inhibition - mouse oral 20 gm/kg; other mutation test systems - mouse lymphocyte 10 mmol/L; DNA inhibition - mouse intraperitoneal 880 mg/kg; DNA inhibition - mouse inhalation 3000 ppm 4 hour(s)-continuous; DNA inhibition - mouse bone marrow 3 mmol/L; sister chromatid exchange - mouse inhalation 10 ppm 6 hour(s); sister chromatid exchange - mouse intraperitoneal 5 gm/kg; cytogenetic analysis - mouse oral 20 mg/kg; cytogenetic analysis - mouse intraperitoneal 264 mg/kg 3 day(s)-continuous; cytogenetic analysis - mouse inhalation 3000 ppm; dominant lethal test - mouse oral 1 mg/kg; dominant lethal test - mouse intraperitoneal 5 mg/kg; mutation in mammalian somatic cells - mouse lymphocyte 12500 ug/L; mutation in mammalian somatic cells - mouse inhalation 40 ppb 6 week(s)-continuous; mutation in mammalian somatic cells - mouse oral 2 gm/kg 5 day(s)-continuous; morphological transformation - hamster embryo 100 ug/L; DNA damage - hamster ovary 17 mmol/L; cytogenetic analysis - hamster lung 550 mg/L; cytogenetic analysis - hamster ovary 600 mg/L; sister chromatid exchange - hamster ovary 750 mg/L; sex chromosome loss and non disjunction - hamster liver 62500 ug/L; sex chromosome loss and non disjunction - hamster embryo 30 umol/L; mutation in mammalian somatic cells - hamster embryo 10 umol/L; DNA damage - rabbit subcutaneous 2344 mg/kg; DNA inhibition - rabbit subcutaneous 2 gm/kg; other mutation test systems - rabbit bone marrow 1 mmol/L; other mutation test systems - cat bone marrow 1 mmol/L; cytogenetic analysis - rabbit subcutaneous 8400 mg/kg

#### REPRODUCTIVE EFFECTS DATA:

670 mg/m<sup>3</sup> inhalation-rat TCLo/24 hour(s) 15 day(s) pre pregnancy/1-22 day(s) pregnant female continuous; 56600 ug/m<sup>3</sup> inhalation-rat TCLo/24 hour(s) 1-22 day(s) pregnant female continuous; 50 ppm inhalation-rat TCLo/24 hour(s) 7-14 day(s) pregnant female continuous; 150 ppm inhalation-rat TCLo/24 hour(s) 7-14 day(s) pregnant female continuous; 9 gm/kg oral-mouse TDLo 6-15 day(s) pregnant female continuous; 12 gm/kg oral-mouse TDLo 6-15 day(s) pregnant female continuous; 6500 mg/kg oral-mouse TDLo 8-12 day(s) pregnant female continuous; 16880 mg/kg oral-mouse TDLo 6-15 day(s) pregnant female continuous; 500 ppm inhalation-mouse TCLo/7 hour(s) 6-15 day(s) pregnant female continuous; 500 mg/m<sup>3</sup> inhalation-mouse TCLo/12 hour(s) 6-15 day(s) pregnant female continuous; 5 ppm inhalation-mouse TCLo 6-15 day(s) pregnant female continuous; 20 ppm inhalation-mouse TCLo/6 hour(s) 6-15 day(s) pregnant female continuous; 5 mg/kg intraperitoneal-mouse TDLo 1 day(s) male; 219 mg/kg intraperitoneal-mouse TDLo 14 day(s) pregnant female continuous; 1100 mg/kg subcutaneous-mouse TDLo 12 day(s) pregnant female continuous; 7030 mg/kg subcutaneous-mouse TDLo 12-13 day(s) pregnant female

continuous; 13200 ug/kg intravenous-mouse TDLo 13-16 day(s) pregnant female continuous; 4 gm/kg parenteral-mouse TDLo 12 day(s) pregnant female continuous; 1 gm/m3 inhalation-rabbit TCLo/24 hour(s) 7-20 day(s) pregnant female continuous; 1 gm/m3 inhalation-rabbit TCLo/24 hour(s) 7-20 day(s) pregnant female continuous; 500 ppm inhalation-rabbit TCLo/7 hour(s) 6-18 day(s) pregnant female continuous  
ADDITIONAL DATA: May cross the placenta. Alcohol may enhance the toxic effects. Interactions with drugs may occur.  
Use of stimulants such as epinephrine may cause cardiac arrhythmias.

#### HEALTH EFFECTS:

##### INHALATION:

###### ACUTE EXPOSURE:

HEAVY CATALYTIC CRACKED NAPHTHA: Low concentrations of gasoline vapor may cause respiratory tract irritation and central nervous system depression. High concentrations may cause death due to respiratory failure or asphyxiation.

###### CHRONIC EXPOSURE:

HEAVY CATALYTIC CRACKED NAPHTHA: Repeated or prolonged exposure to gasoline vapors may cause liver or kidney damage.

##### SKIN CONTACT:

###### ACUTE EXPOSURE:

HEAVY CATALYTIC CRACKED NAPHTHA: Liquid may cause severe irritation with erythema and pain.

###### CHRONIC EXPOSURE:

HEAVY CATALYTIC CRACKED NAPHTHA: Repeated or prolonged contact with gasoline liquid may cause dermatitis of the skin.

##### EYE CONTACT:

###### ACUTE EXPOSURE:

HEAVY CATALYTIC CRACKED NAPHTHA: Gasoline vapor and liquid may cause irritation.

###### CHRONIC EXPOSURE:

HEAVY CATALYTIC CRACKED NAPHTHA: Gasoline vapor or liquid may cause conjunctivitis.

##### INGESTION:

###### ACUTE EXPOSURE:

HEAVY CATALYTIC CRACKED NAPHTHA: Ingestion of gasoline may cause irritation to the gastrointestinal tract and central nervous system depression. Direct or indirect aspiration may cause pulmonary edema and hemorrhage. Transient liver damage is possible.

###### CHRONIC EXPOSURE:

HEAVY CATALYTIC CRACKED NAPHTHA: No data available.

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#### SECTION 12 ECOLOGICAL INFORMATION

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Not available

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SECTION 13 DISPOSAL CONSIDERATIONS

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Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D001. Hazardous Waste Number(s): D018. Dispose of in accordance with U.S. EPA 40 CFR 262 for concentrations at or above the Regulatory level. Regulatory level- 0.5 mg/L. Dispose in accordance with all applicable regulations.

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SECTION 14 TRANSPORT INFORMATION

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U.S. DOT 49 CFR 172.101:

PROPER SHIPPING NAME: Petroleum distillates, n.o.s. or Petroleum products, n.o.s.

ID NUMBER: UN1268

HAZARD CLASS OR DIVISION: 3

PACKING GROUP: I

LABELING REQUIREMENTS: Flammable liquid

PACKAGING AUTHORIZATIONS:

EXCEPTIONS: 49 CFR 173.150

NON-BULK PACKAGING: 49 CFR 173.201

BULK PACKAGING: 49 CFR 173.243

QUANTITY LIMITATIONS:

PASSENGER AIRCRAFT OR RAILCAR: 1 L

CARGO AIRCRAFT ONLY: 30 L

CANADIAN TRANSPORTATION OF DANGEROUS GOODS: No classification assigned.

LAND TRANSPORT ADR/RID:

SUBSTANCE NAME: Petroleum products, n.o.s.

UN NUMBER: UN1268

ADR/RID CLASS: 3

ITEM NUMBER: 3(b)

WARNING SIGN/LABEL: 3

HAZARD ID NUMBER: 33

AIR TRANSPORT IATA/ICAO:

PROPER SHIPPING NAME: Petroleum distillates, n.o.s.

UN/ID NUMBER: UN1268

IATA/ICAO CLASS: 3

PACKAGING GROUP: I

LABEL: Flammable liquid

MARITIME TRANSPORT IMDG:

CORRECT TECHNICAL NAME: Petroleum distillates, n.o.s.

UN/ID NUMBER: UN1268

IMDG CLASS: 3.2

PACKAGING GROUP: I

EmS No.: 3-07

MFAG Table No.: 311

IMDG CODE PAGE: 3271

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SECTION 15 REGULATORY INFORMATION

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U.S. REGULATIONS:

CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4):

o-Xylene: 1000 LBS RQ  
NAPHTHALENE: 100 LBS RQ  
TOLUENE: 1000 LBS RQ  
Benzene: 10 LBS RQ

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.30):  
Not regulated.

SARA TITLE III SECTION 304 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.40):  
Not regulated.

SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370.21):

ACUTE: Yes  
CHRONIC: Yes  
FIRE: Yes  
REACTIVE: No  
SUDDEN RELEASE: No

SARA TITLE III SECTION 313 (40 CFR 372.65):

o-Xylene  
NAPHTHALENE  
TOLUENE  
Benzene

OSHA PROCESS SAFETY (29CFR1910.119): Not regulated.

STATE REGULATIONS:

California Proposition 65:

Known to the state of California to cause the following:

TOLUENE  
Developmental toxicity (Jan 01, 1991)  
Benzene  
Cancer (Feb 27, 1987)  
Developmental toxicity (Dec 26, 1997)  
Male reproductive toxicity (Dec 26, 1997)

CANADIAN REGULATIONS:

WHMIS CLASSIFICATION: Not determined.

EUROPEAN REGULATIONS:

EC CLASSIFICATION (ASSIGNED):

Xn Harmful  
Carcinogen Category 2

EC Classification may be inconsistent with independently-researched data.

DANGER/HAZARD SYMBOL:

T Toxic

EC RISK AND SAFETY PHRASES:

R 45 May cause cancer.  
R 65 Harmful: may cause lung damage if swallowed.  
S 45 In case of accident or if you feel unwell, seek medical

S 53

advice immediately (show the label where possible).  
Avoid exposure - obtain special instructions before use.

CONCENTRATION LIMITS:

|             |   |         |
|-------------|---|---------|
| C>=10%      | T | R 45-65 |
| 0.1%<=C<10% | T | R 45    |

NATIONAL INVENTORY STATUS:

U.S. INVENTORY (TSCA): Listed on inventory.

TSCA 12(b) EXPORT NOTIFICATION: Not listed.

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SECTION 16      OTHER INFORMATION  
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